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This project attempted to determine whether any characteristics of the dropout differ significantly from those who successfully complete their program of study, and attempted to describe the "typical" Yakuma Valley College full-time student over the past five years. Criteria for "success" were any of the following: (1) transfer to another institution of higher education (regardless of performance there), (2) completion of 85 quarter hours in two years with a GPA of 1.75 or better, or (3) completion of 60 vocational credit hours with a GPA of 1.75 or better. The descriptive characteristics from 21 predictor variables provided a composite profile of a-typical YVC student. The most outstanding findings were the percentage values for the "success" criteria: 9.2% transferred, 23.4% completed 85 quarter hours, and 1.3% completed 60 vocational hours, leaving 66% of the full-time students classified as dropouts. In addition, sex, high school GPA, declared major, proximity to YVC, and father's occupation were found to differentially predict at the .05 level between groups, and father's and mother's education were of borderline significance. (Author/MC)

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A CONTRAST BETWEEN THE "SUCCESSFUL" AND "DROPOUT" STUDENT AT YAKIMA VALLEY COLLEGE

by

GARY A. RICE
DIRECTOR OF INSTITUTIONAL RESEARCH AND TESTING
YAKIMA VALLEY COLLEGE

and

WILLIAM SCOFIELD
HISTORY INSTRUCTOR
YAKIMA VALLEY COLLEGE

JC 690 184

This study was conducted on a research grant from the State Board for Community College Education in Washington

March, 1969

UNIVERSITY OF CALIF.
LOS ANGELES

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INFORMATION

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Most, if not all, research ventures are cooperative enterprises and this study was no exception. Though one or two persons may undertake the actual study they are dependent on many others for ideas, criticism, and support. We therefore wish to take this opportunity to acknowledge our indebtedness to the following organizations and individuals.

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We also desire to express our appreciation to the faculty and administration of Yakima Valley College for their assistance and encouragement. As we became engrossed in the study we moved from phase to phase without a full recognition of the many acts of help by many persons to keep the study moving. In retrospect we suddenly became aware of the magnitude of their kindness.

Mr. Al Perry devoted many hours of labor and thought in programming the 1620 computer at Yakima Valley College to comply with our wishes. Obviously the study could not have been done without him and we appreciate it.

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The acknowledgments could continue to many, many other persons but time and space considerations, unfortunately, limit our expressions of gratitude. We take full responsibility for any errors in judgment while conducting this study but we feel that any credit which might be forthcoming should be shared by all of the contributors.

Gary Rice
William Scofield

Research Abstract

A Contrast Between the "Successful" and "Dropout" Student at Yakima Valley College

March 1969

This project attempted to (1) determine whether any characteristics of the "dropout" differ significantly from those who successfully complete their program of study and (2) attempt to take a descriptive look at the "typical" Y.V.C. full-time student over the past three to five years.

The following criteria for "success" were utilized: (1) transferred to another institution of higher education (subsequent performance not considered); or (2) completed 85 or more quarter hours at Y.V.C. with a G.P.A. of 1.75 or better within two years; or (3) completed 60 vocational credit hours with a 1.75 G.P.A. The total sample N of 2061 was 40% of all full-time enrollees since 1965.

The descriptive characteristics from the 21 predictor variables provided a composite profile of the type of student attending Y.V.C. An analysis of the relationship between the various predictors disclosed many things which could have been anticipated but there were some unexpected findings. The most outstanding of the latter were the percentage values for the various "success" criteria. Of the total sample, college transferees constituted 9.2%, 85 credit hours - 23.4%, and 60 vocational hours - 1.3%. Thus 66% were unable to meet any of the criteria and were considered as "dropouts".

Five variables, sex, high school G.P.A., declared major, proximity to Y.V.C., and father's occupation, were found to differentially predict at the .05 level between the two groups. Father's and mother's education were of borderline significance.

Gary Rice

William Scofield

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PARAMETERS OF THE STUDY

Chapter I

Introduction

There are four crucial questions that need to be frankly asked by all of the community colleges of Washington: (1) Where are we going?, (2) What are we doing?, (3) How well are we doing it?, and most crucial, (4) Why are we doing it? Until such questions are addressed and relevant data gathered, any discussion concerning the role(s) and functions of the community college must be made subjectively rather than based on empirical evidence.

In his 1968 annual report, Yakima Valley College President, Dr. Omar Scheidt, succinctly stated what is currently considered to be the Community College philosophy. His remarks provide the framework for this study by pointing out the necessity for identifying and being responsive to student and community needs insofar as possible within existing budgetary and staff availability. The comments he makes inferentially underscore the emerging need for a dynamic program of institutional research at the community college level to provide information for utilization in the complex decisions which must be made at Y.V.C.

> The Community College Act of 1967 officially designated that each community college district shall offer thoroughly comprehensive education, training, and service programs to meet the needs of both the communities and students served by combining with equal emphasis high standards of excellence in academic transfer courses, realistic and practical courses in occupational education, both graded and ungraded, and community services of an educational, cultural, and recreational nature.
>
> ....The effectiveness of a community college is best measured by its responsiveness to the changing demands of education in general and to the needs of the community in particular.
>
> The community college as an in-between college, in between high school and four-year institution, has an unprecedented opportunity to give leadership in innovation. Change is a character of the Twentieth Century, and in this dynamic society we are committed to change. In fact, it seems to be one of the

> few things on which we can rely. The community college must be aware of modifications within society and adapt or be submerged.
>
> A community college philosophy, by virtue of its nature, must not be rigid. It must be flexible enough to embrace innovation and change to the extent that education at this level may be expanded and improved continuously. A good community college will be honestly, gladly, and clearly a community institution.
>
> The faculty members in a community college, to be effective, must know their students, determine as best they can their students' needs, assess the students' attitudes, and plot the direction and rate of the students' development. In light of the knowledge gained about the student, the teacher must determine clear, realistic, relevant, and open-ended course objectives. The student must know the course objectives and what must be done to attain them.[1]

It is obvious, although exact statistics are lacking, that the vast majority of students who matriculate at Y.V.C. to initiate their collegiate studies do not complete two continuous years as full-time students. The philosophical framework underlying the development of the community college system in Washington cited earlier emphasizes that it is an institution designed to be of service to the community. Dr. Albert Canfield recently underscored this point when he stated that

> The community college is no longer a place -- it's a service. By the time a college facility is built it is already overenrolled. The accent must be placed on service rather than buildings.[2]

The community colleges must fulfill their commitment as an institution of service by being responsive to the changing needs of the society they serve. However, if the educational needs of society have not been initially defined and delineated it is nearly impossible to properly satisfy existing needs or determine if the needs are changing. Due to a paucity of empirical data on students who attend community colleges, most of the decisions regarding programs, curricular offerings, skill development, etc., are based on gut-feeling hunches and popular opinion. This last statement is not meant to imply that the decisions reached in this manner are invalid and useless, but rather that an objective look at the existing situation might reveal undisclosed areas where the dollar and effort could be more profitably expended. Therefore, one of the first and most fundamental tasks confronting Yakima Valley College is to identify its student population. Once that has been completed the college would be in a much better position to discover student needs and how well they are or are not being met. This latter aspect is especially relevant today as the attrition rate of students appears to be out of proportion to those who successfully complete a two-year program of study or those who are admitted to a four-year institution. This concern about the extent to which students appear to profit from their activities at Yakima Valley College plus the need to know something about the type of student who typically enrolls provides the genesis for this study.

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[1] Scheidt, Omar A., Annual Report of the President, Yakima Valley College, Yakima, Washington, 1968.

[2] Canfield, Albert A., -- address to Sunnyside, Washington Chamber of Commerce, reported in Yakima Herald-Republic January 8, 1969.

Goals of the Study

The project is of necessity a very ambitious one since there is an urgent need for empirical information to be utilized in the decision-making process at Y.V.C. The college must know the major characteristics of its students to develop a frame of reference for providing a quality program of education. Therefore, the first goal of this study will be to determine quantitative profiles of the student population at Y.V.C. These profiles are not intended to be exhaustive for several reasons: (1) There is no concensus as to the type and number of characteristics to be considered, (2) difficulty in adequately defining the characteristics, (3) inaccessability of the data, and (4) insufficient time to fully design the study and tease out the interrelationships between variables. The most that can be hoped for under the circumstances is a generalized composite of a fairly large sample of students who are as representative of the total population as conditions will allow.

Once the descriptive data has been gathered, surveyed, and presented, the second phase of the study will be concluded. This will be an attempt to determine whether the characteristics of the "dropout" differ significantly from those who "successfully" complete their program of study at Y.V.C. The terms "dropout" and "success" have been placed in quotations here and throughout the study because a concise definition is lacking. The statistics on the dropout are usually discussed in estimations and these numbers are of questionable validity and reliability. Even the research conducted by others in this area concludes that the findings are predicated on how one chooses to define these terms. This study is no different in that respect. The statements and conclusions forming the substance of this report are only valid within the context of the definitions of "success" and "dropout" (See section of Subjects). It is fully acknowledged that the chosen definitions are somewhat arbitrary and nebulous but some point of reference had to be established or the study could not have been conducted. It is hoped that the reader will keep this point in mind as he reviews the findings.

Assuming that (1) the null hypothesis about the difference between success and dropout is not confirmed and/or (2) time and funds permit and (3) the data is amenable to such treatment, phase three of the study will utilize the grade cards of the sample to determine if there are any distinct curricular patterns taken by the "dropout" vs. the "successful" student. The open-door community college admissions policy now in effect requires that all who apply may enter but it should be incumbent on the institution to strongly encourage each student into programs where his initial probability of success is highest until he demonstrates a proficiency that will allow him more flexibility of choice.

There are two integral and significant by-products that have materialized at this writing as a direct result of this study. First, Yakima Valley College is currently in the formative stage of developing a dynamic and functional institutional research program. A first step in the formation of such a program is to design an information system containing data that is rapidly accessible in a form that lends itself to computer treatment. This study has been beneficial to help isolate variables that are potentially significant predictors of student success. Also the design of a master research data card containing predictor data on each matriculating student has been suggested.

The second by-product of the study has been the creation of college staff and student interest in research as a systematic approach to provide information about the campus, students, teaching techniques, new program development, etc. If this type of study will be utilized by all elements of the college to renew and revitalize communication it will be well worth the time, effort, and monies expended.

Subjects

It was recognized at the outset of this study that one of the great difficulties would be the semantic problem of defining the "dropout". A brief, cursory review of the related literature on this problem produced only fragmented results and a concensus definition. It was necessary to dichotomize the variables "success" and "dropout" when they probably should be considered on a continuum. Follow-up studies on students after a five to ten year time lapse of leaving school produce decidedly different results than studies conducted at the point of egress from a formal learning situation. This point produces much armchair philosophy about when the success of an educational program should be considered. The relative merits of this debate are not the purpose of this project but a side had to be chosen when defining the "successful" student. The community college has to concern itself with exposing a student to knowledge and, in many cases, not knowing the fruits of its labor until some future time, if ever. However, the reality of operating a physical plant with all it entails, including the expenditure of large sums of money, also dictates that education must be considered as a marketable product and the student is thus entitled to a fair value in service for money spent. The determination of what constitutes a "fair value" in service is partly defined by the society who spends its money but a greater weight is placed on the professional educator to make these decisions. The latter group, since they devote their occupational and professional lives to this task, must evaluate what is needed to be a "success" and orient their methods to those goals. Thus the creation of innovative methods, programs, and techniques implies that some criteria of success has been established and the means to those ends are being implemented.

These thoughts, among others, guided the formation of criteria for "success" and "dropout". For purposes of this study three criteria that are commonly and/or traditionally considered to imply successful completion of a community college program were utilized. If a student in the sample met any of the criteria he was considered to be "successful". Any student in the sample who failed to meet at least one of the three criteria was considered a "dropout". No attempt was made to determine the reasons why the student did not or could not meet the criteria. The three criteria considered as "success" were:

1. The student, at any point after the completion of at least one quarter as a full-time student, applied and was accepted by another two-year or four-year institution of higher education in the state of Washington. There was no evaluation of per-

formance subsequent to the transfer.

or

2. Completed at least 85 quarter hours at Y.V.C. with a grade point average of 1.75 or better within a two-year period of time. Note that both the number of quarter hours and G.P.A. were reduced from traditional criteria yet the person was still considered to be "successful".

or

3. The student completed at least 60 hours with a college G.P.A. of 1.75 or better in any terminal program at Y.V.C. whether its specified length was one, two, or three years.

It was realized at the outset of the project that many questions might be raised about utilizing 1.75 G.P.A. with 85 credit hours to constitute "success". It would seem more plausible to use a 2.00 college G.P.A. but this still has the indirect reference to college transfer and a person could still be "successful" later on without a baccalaurate degree. The choice of 1.75 was made to provide some flexibility since, even with 85 credit hours completed, it would only take 10 credit hours of "A" work to reach 2.00. Also, the criterion would be more realistic to the Vocational-Technical curriculum. However, to reply to those who feel that completing 90 credit hours with 2.00 G.P.A. is more realistic, a frequency tally disclosed that 12.4% or 60 of the 672 students currently considered to be "successful" would become "dropouts". In terms of the total N of 2061 the change of 60 students would be relatively insignificant.

The third criterion which constituted "successful" completion of community college performance was extremely difficult to quantify and, thus, represents a distinct limitation in this study. Several conferences were held with the Director and staff of the Vocational-Technical Division to establish guidelines for performance. The concensus definition revolved around the "employability" of the student. Factors which influenced instructor recommendation in this regard were work habits, punctuality, industriousness, motivation, among others. An instructor had contact with the student over a longer period of time than instructors presenting college transfer courses. The best definition would be based on a follow-up of graduates of various programs but, since this was not available, it was finally agreed that many of the factors cited above entered into an instructor's evaluation of student performance each quarter. Therefore, the second criteria for "success" was modified to 60 hours with 1.75 G.P.A. or better with mutual reservation regarding its limited applicability in this area. The salient feature of the discourse which developed the criteria was that there is an urgent need to locate former students and their employers and establish meaningful dialogue about what constitutes "success" in the various occupational areas.

An initial decision was also made to include every student who was full-time (12 credit hours or more) for one or more quarters. This would exclude those part-time and evening students who took an occasional course but never took 12 or more credit hours in a single quarter. It was determined that, of the approximately 12000 students enrolled in all programs offered at Y.V.C. since summer 1965, when the college converted to data processing, 5300 had been full-time students for at least one quarter. The demands of the second criteria for success further limited the selection of students for the sample. No full-time student could have been included in the study if he matriculated later than fall quarter 1966 since he could not have had at least a two-year opportunity to complete his program by the end of spring quarter 1968 even though many could have been completing their program at that time. With this limitation the final number (N) for the study was reduced to 2061. Every attempt was made to make the sample broad and reasonably representative of students previously enrolled at Y.V.C. although proportionality of sample based on academic vs. vocational programs was not considered.

Predictor Variables

The factors which dictated the selection of variables to provide descriptive information and possibly become predictors to discriminate between the "successful" and "dropout" were threefold: (1) The variable in question was applicable to a majority of the student body, (2) the data was readily accessible either on prepared I.B.M. cards or in the student's college folder and (3) the variable could be categorized and, hence, was amenable to quantification and statistical analysis by computers. It was recognized at the outset and substantiated as the study progressed that the precise objective definition of many factors in the study would not be possible. Whenever possible the variables were put into discrete categories but, in other instances, the decision as to category was totally subjective. In the succeeding section each predictor will be defined as it was considered for inclusion in this study.

1. Sex - Male vs. Female

2. Resident Status - Resident of the State of Washington vs. Non-Residents

3. Marital Status - Single vs. Married vs. Widowed, Divorced and Separated

4. Veteran Status - Veteran vs. Non-Veteran. The former category included all forms of military service and no attempt was made to determine the number of months in service. It was discovered, however, that the N in this category was too small to lend itself to valid generalizations.

5. Age - The student's chronological age at first matriculation to Y.V.C. was the prime consideration with this variable. It was hoped to use this variable

to determine if a student entered college immediately upon graduation or after a period of time as it related to distinguishing the "successful" student from the "dropout". Other than that, the data would be utilized in gross categories to determine the approximate age distribution of the Y.V.C. population.

6. High School Grade Point Average - This variable was the cumulative high school G.P.A. regardless of the high school attended and was based on the traditional five-point standard - F = 0.00-0.99, D = 1.00-1.99, C = 2.00-2.99, B = 3.00-3.99, and A = 4.00. No finer discriminations were considered such as a fractionated grading scale or plus and minus grades. Quite obviously, the grading practices vary both between and within high schools depending on the philosophy and policies of the school district, high school principal, and instructors. This, however, is another issue which was acknowledged but not considered to be germane to this study.

7. Yakima Valley College Grade Point Average - The following categories were utilized in coding college G.P.A. for purposes of this study: A-4.00; B-3.00-3.99; C-2.00-2.99; D-1.00-1.99; and F, WF, and AWF-0.00-0.99. Incompletes, audits, and passing withdrawals were excluded because they had no effect on altering G.P.A. at the time they were earned. No distinction was made between the grades earned in college transfer vs. terminal non-transfer courses.

8. Total Credit Hours Successfully Completed at Y.V.C. - It was hoped that a distribution of total hours completed at Y.V.C. would provide the college with some idea of the point at which the majority of students leave regardless of reason. This variable, like #7, did not differentiate between college transfer hours and terminal non-transfer hours. Utilizing this variable to contrast the successful and dropout student may also be illuminating.

9. "F" and Repeat Hours - Many of the same reasons for including variable #8 entered into the decision to include this variable. Since college policy allowed a student to repeat those courses in which he received a grade of F or D, the resultant data relating to this variable must take this fact into consideration. Without manually searching through the records of all 2061 students in this sample there is no accurate way to know how many hours were non-repeated F grades or how many were repeated F and/or D grades. A distribution of repeat hours for the total sample should be revealing.

10. Physical Education Hours - The inclusion of this variable was simply a matter of convenience since the data was available and it would provide some additional information about the descriptive characteristics of the sample. These hours were only P. E. activity courses, not courses related to a physical education major.

11. Birth Order - It was thought that this data would be interesting to

examine since it has been hypothesized that the community college receives students lower in the birth order of a family than the four-year institution. The reasons for this hypothsis involved psychological and sociological conclusions regarding personality characteristics and temperament and educational orientation and aspirations of the oldest child in the family vs. the second, third, fourth child, etc. Also the economic and prestige aspect, assuming intellectual ability, of sending the oldest directly to a four-year institution but finding it financially necessary to send the later born children to a two-year college with the intention to transfer. This data was gathered inferentially by utilizing the application for admission form which indicates the number of older male and female siblings in the family.

12. High School Size - This data was obtained from the high school transcript which is required for admission to Y.V.C. The variable refers to size of the graduating class rather than the total high school. The data will be broken into size categories of 100 to provide a proportional distribution of the total sample and some idea of the size of high school which provides Y.V.C. with the majority of its students.

13. Student Rank in High School Graduating Class - Compared with high school size, the student's rank in class gives the college some idea of the relative caliber of its students from various sized high schools. This information will become an important part of the overall picture. The data for this variable was secured from the student's high school transcript along with the high school size.

14. Proximity to Y.V.C. - In an attempt to ascertain the geographical distribution of students who attend Y.V.C and are successful or dropout without identifying individual high schools, the high school code on each student master card was utilized and converted to a proximity code. The following proximity code was adopted: Yakima School District #7, Yakima County, Community College District #16, High Schools East of the Cascade Mountains, High Schools West of the Cascades, and Outside the State, Foreign Students, etc.

15. Father's Education - It was desired to know the amount of formal education the father achieved to determine if it contributed to the student's choice to attend a community college and also if it was a significant factor between the student who completed his stated purpose for attending the college and the student who did not. The original design of the study called for one-year categories but, unfortunately, the data on the student's application blank was not and could not be converted to that format. Therefore, the categories which were finally selected were somewhat more gross than anticipated and the placement of each bit of data into the categories was fairly subjective. Nevertheless, the selected categories provided some pertinent figures to be considered by the college staff. The categories were: High School Diploma or Less, Some College but Less than a Degree, Bachelor's Degree, Graduate Degree, and Trade School.

16. Mother's Education - The rationale that existed for selecting the categories for father's education produced the same categories and placement of data for this variable.

17. Father's Occupation - The discrete categories for this variable were borrowed, with generous permission, from a biographical survey published by the Washington Pre-College Testing Program. From that point, however, the placement of data from the college application form was strictly a subjective interpretation by the three members of the clerical staff assigned to this task. The principal researchers tried to oversee the data collection for this variable and make a decision for questionable occupations. The only indirect check on the accuracy of this data would be to compare total percentages in each category with father's educational level and draw inferences from any similarities. The categories were as follows: Professional, Managerial, Office, Sales, Retired, Farm Owner, Skilled, Semi-skilled, Unskilled, and Civil Service.

18. Mother's Occupation - The problems that confronted the researchers in gathering information for father's occupation were present for this variable also. The same categories were utilized with the obvious addition of a Housewife classification and the data was generated in the same manner.

19. Method of Financing One's Education at Y.V.C. - The biographical survey referred to earlier was used to provide ideas for discrete categories which could be modified to suit the situation. Again, however, the data on the application blank was simply not accessible in a form that lent itself directly to categorization. Many times a subjective interpretation had to be made so the reader should not consider the findings regarding this variable to be absolute. However, even gross percentage values in each category for the total sample should be of use to the Financial Aids and Job Placement Counselors. The potential ways for financing one's college education were: Academic Scholarship, Athletic Scholarship, Part-time Job Only, Parents Only, Work-study, Parents and Part-time Job, G. I. Bill, and Others (savings only, inheritances, estate, etc.)

20. College Division - Yakima Valley College has been divided into eight major academic divisions with a counseling division created at each quarter registration period to assist those undecided students and those with poor academic records. It was thought that the determination of matriculating students who enter each academic discipline would be useful as a factor to consider in such future college decisions as allocation of monies, employment of a faculty and clerical staff, anticipation of future enrollments for long-range planning purposes, etc. It should be evident that the findings should not be considered as a unitary criterion for making such decisions as suggested above but merely as a statement of existing conditions.

21. College Major (Area) - The State of Washington has provided each college with a uniform two-digit code for the student's declared major as he enters and Y.V.C. implants this code on the student master card. The vast majority

of students enter with the avowed intention of transferring to a four-year institution but the reality of statistics supplied by these colleges and universities show that these intentions are somehow diverted into many other avenues. The community college, as one of its functions, provides a two-year liberal arts background for those students who state their intention to continue towards a baccalaurate degree. Since the student cannot complete a four-year program at Y.V.C. his stated major plus the inevitable changes in program he will probably make, produces a situation that is extremely complex. Therefore, the data for this variable only reflects the student's plans at the point of entrance. Even this data is subject to error since many students complete and submit their college entrance credentials while still seniors in high school and then change their plans during interim period.

The data was grouped into areas for declard major (See Appendix C for majors within each area) as follows: Applied Sciences, Biological Sciences, Health Sciences, Business and Economics, Business-Vocational, Creative Arts, Language and Literature, Physical Education, Physical Sciences and Social Sciences and Undecided.

RESEARCH METHOD

Once the definitions of "success", "dropout", and the predictor variables were determined the next task was to gather the data to be included in the study. Figure 1 presents a procedure flowchart which was designed to provide a graphic view of the various steps which were taken. An IBM flowcharting template was utilized to provide the symbols representing the various operations which were carried out in securing the final data for descriptive analysis.

The first step was to obtain permission from the college administration to utilize the registrar's files to gather the data. The student master and transcript summary cards for all of the approximately 12000 students enrolled at Y.V.C. since Summer 1965 were sent through an IBM 1401 computer which selected out all full-time students (5300). (Note: A statement of the data card format for the student master, transcript summary, personal data, and grade cards appears in Appendix C of this report.) As the computer identified these students, a printout was prepared and their student master and transcript summary cards were duplicated. All of the original cards were then returned to the registrar's files. The next step was to take

Figure 1
Procedure Flowchart for Drop-out Study

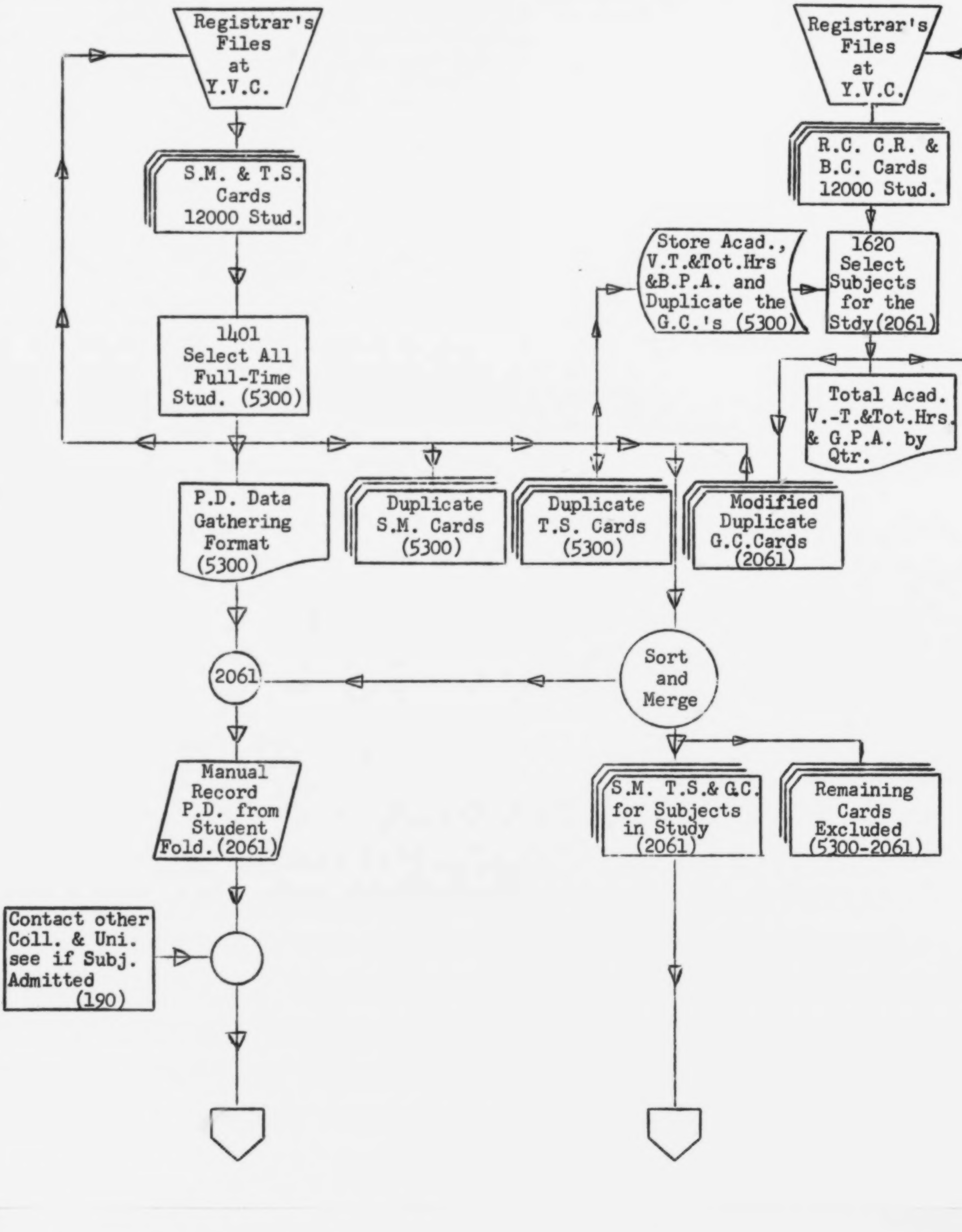
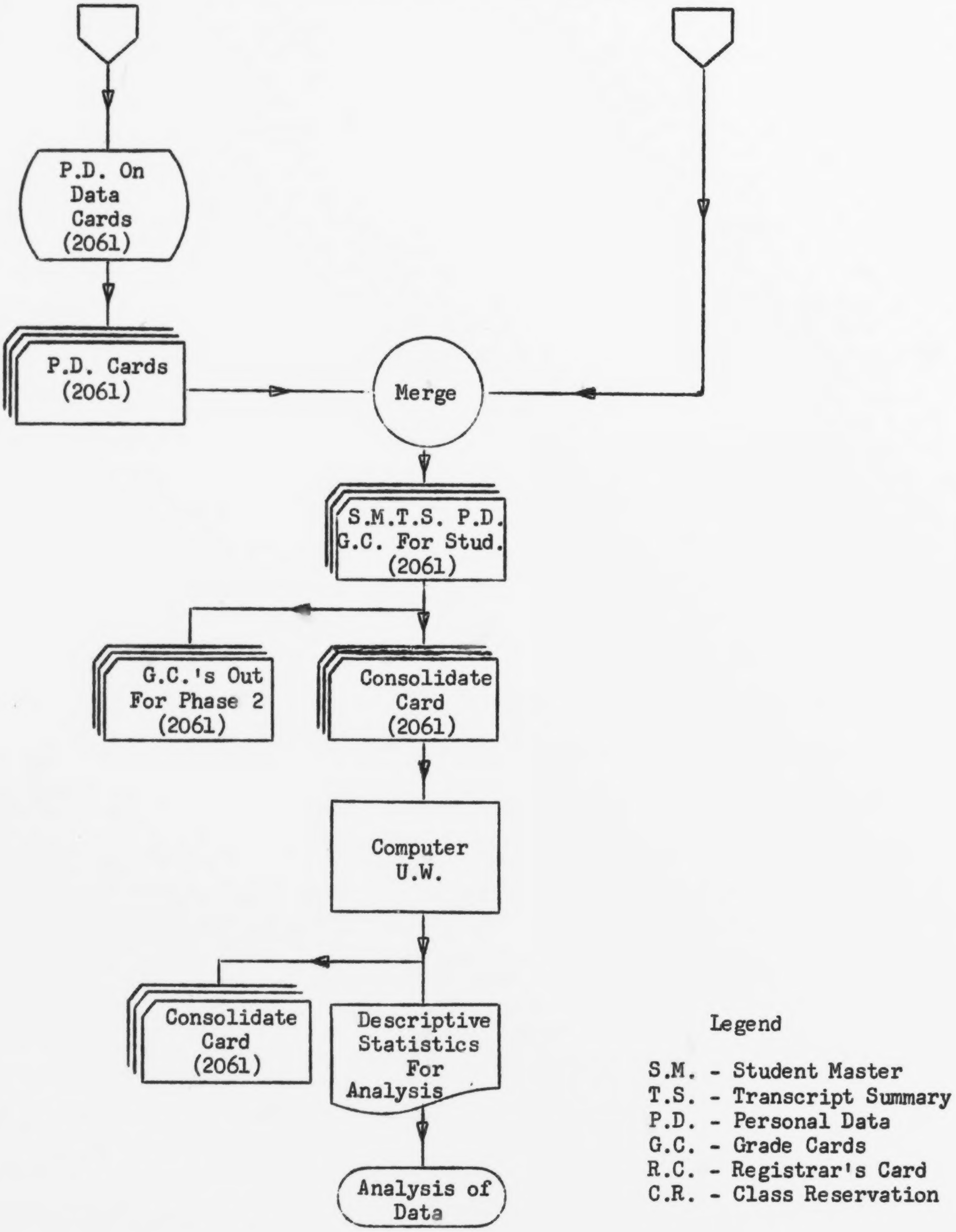

Registrar's Files at Y.V.C.
S.M. & T.S. Cards 12000 Stud.
1401 Select All Full-Time Stud. (5300)
P.D. Data Gathering Format (5300)
Duplicate S.M. Cards (5300)
Duplicate T.S. Cards (5300)
Modified Duplicate G.C.Cards (2061)
Registrar's Files at Y.V.C.
R.C. C.R. & B.C. Cards 12000 Stud.
Store Acad., V.T.&Tot.Hrs &B.P.A. and Duplicate the G.C.'s (5300)
1620 Select Subjects for the Stdy (2061)
Total Acad. V.-T.&Tot.Hrs. & G.P.A. by Qtr.
2061
Sort and Merge
Manual Record P.D. from Student Fold.(2061)
S.M. T.S.& G.C. for Subjects in Study (2061)
Remaining Cards Excluded (5300-2061)
Contact other Coll. & Uni. see if Subj. Admitted (190)

Figure 1
Procedure Flowchart (Continued)


P.D. On Data Cards (2061)
P.D. Cards (2061)
Merge
S.M.T.S. P.D. G.C. For Stud. (2061)
G.C.'s Out For Phase 2 (2061)
Consolidate Card (2061)
Computer U.W.
Consolidate Card (2061)
Descriptive Statistics For Analysis
Analysis of Data

Legend

S.M. - Student Master
T.S. - Transcript Summary
P.D. - Personal Data
G.C. - Grade Cards
R.C. - Registrar's Card
C.R. - Class Reservation

the duplicated transcript summary cards and store their data on an auxillary disc to an IBM 1620 on the Y.V.C. campus. The computer was programmed to read the registrar's card, class reservation cards and grade cards for the 12000 students and compare the data with that stored on the disc according to the criteria necessary for inclusion in the study. The output of this operation produced 2061 students who met all of the criteria to be included in the sample. As the computer determined that a student met the qualifications, it printed the student's name, Y.V.C. identification number, total hours completed at Y.V.C., number of academic and vocational hours, and college G.P.A. In addition, all of the grade cards for these 2061 students were duplicated in a modified form for later use. The original cards were returned to the registrar's office.

Step three consisted of sorting and merging the duplicated student master, transcript summary, and grade cards for the 2061 students and excluding the remaining cards. The printout list produced on the 1620 was then presented to a clerical staff and they proceeded to manually extract data which was desired but not already available on an IBM card. One of the steps of this operation was to ascertain whether a student attempted to transfer to any other two- or four-year institution by noting whether a request was made for submission of a college transcript. All of the colleges and universities which received college transcripts by 190 students of the total sample were contacted. They were asked to indicate whether the student was admitted regardless of subsequent performance. All of the colleges and universities were prompt and courteous in complying with this request even though it was made at a busy time of the year.

The personal data was gathered and placed on a separate card and merged with the other cards cited earlier.

It was necessary to gather the data in the manner prescribed above because the registrar's files were the only place on the campus where the data was obtainable. However, the registrar's files were not designed to be utilized in a research function with the end result being a volume of data which far exceeded the 20,000 core storage capacity of the 1620. Faced with this dilemma, the researchers sought the technical assistance and expertise of Dr. William Schill and the Center for the Development of Community College Education at the University of Washington. Dr. Schill proceeded to condense and consolidate the data from the student master, transcript summary, and personal data cards on a single card for each student. (Note: A format of this consolidated card appears in Appendix C. Also, the format of this card is being considered in the design of a master research data card which is currently being developed at Y.V.C.)

The grade cards were excluded at this point since they were not needed for phase one (descriptive characteristics). They will be recombined with the consolidated cards for phase three (comparison of curricular patterns of the "dropout" vs. "successful" student), if conditions warrant it.

After the consolidated card was prepared for each student in the sample, the data was submitted to the computer at the U.W. The result was a printout indicating the relationship between the predictor variables and percentage values for each category of each predictor variable. Tri-matrix percentage tables were prepared from the data and are in Appendix A of this report. Chi Square values which indicated degree of relationship were also computed and shown on those tables where relevant. The reader is invited to examine those tables which provide data regarding his special interests.

SUMMARY

This study had its genesis as an outgrowth of Y.V.C.'s staff awareness of the need for objective information about its student population and some idea about factors which lead these students to terminate their program prior to what is traditionally considered to be "successful" completion of a community college program. From the outset of this project difficulties were encountered in the semantics of defining the variables in question as well as "success" and "dropout". However, decisions regarding definition were reached which coincided with the general purposes of this study for Y.V.C.

RELATED RESEARCH

Chapter II

The "dropout" has always been a topic of discussion, especially at the community college level, and many figures have been bandied about. It is common knowledge that a significant number of students leave the community college prior to the completion of what is commonly and/or traditionally considered "success" at the point of egress. These colleges have very little idea of what happens to these people and, therefore, very little information about their reasons for attending a community college or whether their felt needs as well as society's need to have its members educated have been met.

The American society is becoming increasingly aware of the dropout as a national problem as scientific and technological advancements demand more and more educational sophistication of its members.

> During the decade 1960-1970 an unprecedented 26 million young people with varying degrees of education will pass out of the schools and into the labor market. If some revolutionary improvement has not been brought about, at least 7.5 million of them will be school dropouts -- and 2.5 of these, it is estimated, will have had less than eight years of formal education.[3]

President John F. Kennedy focused attention on the school dropout as one of the central points of his 1963 State of the Union message to Congress. On January 12, 1965, the national awareness of the dropout at all levels of education was summarized by President Johnson in his Educational Message to Congress.

> Every child must be encouraged to get as much education as he has the ability to take. We want this not only for his sake -- but for the Nation's sake. Nothing matters more to the

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[3] Schreiber, Daniel L., editor. Guidance and the School Dropout. Washington, D.C.: National Education Association, Project on School Dropouts, and American Personnel and Guidance Association, 1964.

> future of our country; not our military preparedness -- for armed might is worthless if we lack the brain power to build a world of peace; not our productive economy -- for we cannot sustain growth without trained manpower; not our democratic system of government -- for freedom is fragile if citizens are ignorant.[4]

This increased sensitivity to the student who fails to complete a secondary education is a rather later emerging phenomena even though the problem has existed for some time. During the colonial period in America a formal education was not emphasized for either sex. A boy had to learn his father's skills of farming, harvesting, carpentry, etc., on-the-job since he was expected to follow in his father's footsteps. What formal training the male achieved was obtained during the winter months when there was less to do on the farm. The girl was even less encouraged to attend school except possibly during summer school to learn reading, writing numbers, and social graces.

Much of the same pattern existed up to and including the early 20th century in rural America where the basic function of the child was as an economic asset in the farm family partnership. The Industrial Revolution which occurred earlier induced a great imigration to the cities from the farm. The development of the many specialized secondary institutions to take over and mass produce the products originally supplied by the family drastically changed the educational system. Among other things this revolution gave those city dwellers time to acquire an education but the breadth and depth of background was not nearly as extensive as what is demanded today.

Probably the single most monumental factor leading to the problem of the dropout today is the Scientific Knowledge Explosion of the 20th century. Knowledge is geometrically progressing at a rate which is almost beyond human comprehension.

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[4] President Lyndon Johnson, Excerpt from an Educational Message to Congress, January 12, 1965.

It is necessary for a person to become highly specialized to be truly effective in his chosen vocation or profession. The same jobs which suggested a high school diploma a few years earlier now require the baccalaurate degree as a minimum prerequisite for employment consideration. The fact that more and more years of concentrated effort in sophisticated learning at a very abstract level are essential to even begin to develop a salable skill is undoubtedly a factor having a bearing on the youngster's desire to terminate his formal education.

This discourse was not meant to imply that all of the potential reasons for dropping out of school have been exhausted. Learned men have toiled, large quantities of money spent, and volumes written on this topic but the semantic difficulties still remain.

Even though it was recognized and substantiated while searching the literature that no concise, universally accepted definition was available, some reference point had to be established. The National Education Association Project on School Dropouts, the U. S. Office of Education, and several other national organizations pooled their talents and resources to formulate a standard definition of "Dropout". This definition appeared to coincide with the situation at Y.V.C. and was thus used as a guide to modify and develop the criteria for this study.

> A dropout is a pupil who leaves school for any reason except death, before graduation or completion of a program of studies without transferring to another school.[5]

Probably the most valuable way to view studies on the school dropout is in terms of their purpose. In most cases the studies are generated to answer some specific question(s) such as: (1) How many students drop out of school?,

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[5] Schreiber, Daniel L., Kaplan, Bernard A., Strem, Robert D. Dropout Studies: Design and Conduct. Washington D. C.: National Education Association, Project on School Dropouts, 1965.

(2) What are the reasons for dropping out of school?, (3) Who are the dropouts and what are they like (descriptive studies usually separated in statistical form)?, (4) Which pupils will drop out (a predictive study)?, (5) What happens to dropouts (a followup study)?, and (6) What ways and means can be developed to reduce dropout rates?[6]

The trend today in research at all levels of education is to term what was first considered as "reasons for dropping out" to "factors associated with dropping out". Instead of simple causes, there seems to be a cluster of interrelated factors acting on the student and the reported "reason" may be the precipitating event which culminates a long list of predisposing causes. The reason which the student ostensibly supplies on the exit accounting form may or may not be the real reason(s). In some cases, the student is unwilling to disclose the factors which entered into the decision to leave school and, in many other instances, the student is unable to identify the reasons himself. Whether or not the reasons are known, the point remains that the dropout and/or potential dropout constitute a loss and liability which our contemporary society can ill afford. Therefore, all levels of education have and must continue to strive to understand why these students become disenchanted with the learning process and what education can provide to make their lives more meaningful and fulfilling.

> The progress and welfare of this country will inevitably be adversely affected by the failure of able students to continue their education at levels commensurate with their capabilities. Before the college community can initiate action to reduce college dropouts, better understanding of circumstances attending discontinuance is needed.[7]

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[6] Ibid.

[7] Iffert, Robert E., Clarke, Betty S. College Applicants, Entrants, Dropouts. U. S. Department of Health, Education and Welfare. OE-54034 Bulletin, 1965. No. 29, Chapter 4, p. 25-40.

These words set the theme of a report of findings by twenty cooperating four-year institutions of higher education who examined entering freshmen during the fall term 1956 and fall 1957 and students at all undergraduate levels that enrolled during the 1956-57 academic year.[8] The institutions involved were not considered representative of more than two thousand such colleges and universities but, nevertheless, it constitutes a significant number of students. The study attempted to determine factors which cause dropouts and ascertain the relative influence of these factors. The information was obtained from student statements. The statements were often suspect of masking other more covert reasons for leaving. More than 45% of the dropouts attributed their withdrawal to academic difficulties while poor grades actually accounted for approximately one-fourth of the attrition. Health and family reasons, including marriage, ranked second, and financial factors, third. Many students receiving college scholarships became dropouts, particularly from the private institutions. It was concluded that the colleges should ascertain and set the minimum qualifications of educability but then concern themselves with levels and types of motivations; and student motives become increasingly diversified as the college and university population and curriculum become more heterogeneous.

There were many other research projects at the four-year college and university level and the one cited above was not intended to be the epitome of these efforts. Rather it illustrated the fact that the dropout from a university is viewed quite differently than a dropout from a two-year college or high school. The stringent entrance requirements give the four-year schools much more control over those admitted and they can therefore make different assumptions about the functions and processes of higher education.

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[8] Ibid.

The two-year junior colleges and community colleges of the nation are faced with a different problem in the "dropout". Their open-door policy dictates that they must admit nearly all who enter and their philosophy makes them vitally concerned with individual student deficiencies. The concern expressed by these colleges over the growing number of students who leave before completing their stated intention was found in all publications relating to the junior college. A recent issue (Vol. 2 No. 8) of the E.R.I.C. Junior College Research Review was devoted to areas needing research in the junior colleges. The Review pointed out that research on the reasons for dropouts and procedures to reduce attrition rates ranked third among California colleges who participated in a study to identify critical problems. This study[9] of the critical areas needing review was quite comprehensive and it was significant that the dropout problem was third out of 26 areas needing further study. The questions in this area which were posed correlated quite well with the research trends referred to earlier in the chapter. Among the more significant queries were: (1) What do students gain from attending junior colleges for one semester or one year?, (2) Do students gain anything from enrolling in a junior college and withdrawing prior to completing a semester?, (3) What happens to students who are dismissed because of poor scholarship?, (4) Is student dropout a serious problem?, (5) Why do students withdraw from college?, (6) How may the dropout rate be reduced?, and (7) What values do students possess that cause them to make early or late, wise or unwise, effective or ineffective career decisions?

The same type of statewide assessment was ably compiled for the Washington State Community Colleges[10] by Mr. J. Allen Suver and again the identification of the potential dropout had a high priority for consideration.

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[9] Petersen, Basil N. Critical Problems and Needs of California Junior Colleges. California Junior College Association and California State Department of Education, 1965.

[10] Suver, J. Allen. Problems and Needs of Washington Community Colleges: An Exploratory Survey of Important Research Areas. Center for the Development of Community College Education, University of Washington. Occassional Paper No. 2, June 1967.

It was interesting to note this shift of emphasis among the junior colleges. During the past decade the interest seemed to focus upon the academic achievements of the two-year college transfer students at four-year institutions. From a variety of studies,[11] the general conclusions indicated that: (1) students who transfer from two-year colleges to senior institutions typically obtain lower grade point averages during the first semester following the transfer; (2) the grades of two-year college transfer students are lower than the average grades made by students who entered senior institutions as freshmen; (3) the transfer students' grade point averages improved with each successive semester they remained enrolled at the senior institution; (4) the transfer students are less likely to complete the bachelors degree than the native students; and (5) the transfer students who graduate take longer to attain their baccalaureate than do the comparable native students. This complete involvement and concentration in the transfer student probably stemmed from several sources: (1) the majority of students entered with the stated intention to transfer, (2) the majority of the college staff has a university frame of reference based on their training and background, and (3) the public has the image that college automatically means a route to a baccalaureate degree. It has only been a recent phenomenon that the community colleges in Washington are focusing on that unidentified group who just disappear from the college scene.

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[11] Medsher, Leland L. The Junior College, McGraw-Hill Book Company, Inc., New York, 1960 p. 119-133, 136-137; Martorana, S. V. and Williams, L. L. "Academic Success of Junior College Transfers at the State College of Washington", Junior College Journal, XXIV (1954), p. 402-415; Hills, John R. "Evaluating Transfer Applications", College and University, XL (Spring 1965), p 241-248; Kroell, Dorothy M. and Medsher, Leland L. Factors Affecting Performance of Transfer Students from Two- to Four-Year Colleges, (Berkeley: Center for the Study of Higher Education, 1964.)

A further source of confusion involves the computation of the various meaningful rates of dropouts to the total school population. Several different "dropout rates" have been used throughout the country which are not truly comparable. Interpretations must be made with an understanding of the manner in which they are computed and the data upon which they are based. Dr. Ray Jongeward and Dr. Alan Metcalf, in a report on the Dropout Patterns in Washington High Schools, attempted to define the various dropout rates.

> (1) "Annual Dropout Rates" represent the total number of dropouts during a 12-month period as a percentage of the number of pupils for whom the school is accountable. These rates may be computed for each grade level or for a total block of grades.
>
> (2) "School-Year Dropout Rates" involve only those pupils who drop out during the school term and do not account for those who fail to return to school after the summer vacation.
>
> (3) "Cumulative Dropout Rates" are based on longitudinal studies which follow a particular group of pupils through a block of years (e.q., four years of high school) and report the dropouts as a percentage of the total accountability.
>
> (4) "Projected Cumulative Dropout Rates" are based on available "Annual Dropout Rates" and on the assumption that the conditions producing those rates will remain constant for a period of years.
>
> (5) "Estimated Cumulative Dropout Rates" are based on the change in the size of a given class between two points in time and adjusted for the estimated net migration of the age group.[12]
>
> Several different "dropout rates" have been used throughout the country which are not truly comparable. Interpretations must be made with an understanding of the manner in which they are computed and the data upon which they are based.

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[12] Jongeward, Ray E. and Metcalf, Alan W. Dropout Statistics. State Office of Public Instruction, Olympia, Washington. Research Report 02-05A. April, 1966.

The findings of their report indicate a steady decline in the dropout rate during the 1955-65 decade in the secondary schools of Washington. If the assumption is valid that migration patterns for this age group have not changed markedly during the past ten years, the trend may be interpreted as evidence of the holding power in Washington high schools.

In 1967 the research division of the National Education Association published a very comprehensive and thoroughly documented research summary on School Dropouts.[13] The findings are too numerous to cite in this limited review of the literature but the reader is encouraged to peruse the report for the wealth of information it provides.

There are many other areas such as the New Hope Project[14] which attempted to follow-up dropouts from an adult vocational-training project, a study of differential counseling techniques with potential dropouts,[15] personal variables contributing to the decision to leave school,[16] and others too numerous to mention that have addressed themselves to this problem of school dropout. Quite obviously much more information needs to be obtained, however.

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[13] Varner, Sherrell E. School Dropouts, Research Division, National Education Association, Research Summary 1967-S1. Copyright 1967.

[14] Pearce, Frank C. Dropout Patterns in the New Hope Project. Modesto Junior College, Modesto, California. October 1966.

[15] Kunhart, William E., and Roleder, George. Counseling Techniques with Potential Dropout Students in Junior College. Mt. San Antonio College, Walnut, California. 1964.

[16] Urdal, Lloyd B., Cech, Eugene C., Hamreus, Dale G., Workman, Dan J. Dropouts: An Analysis of Personal Variables Within the School Situation. Study sponsored by Washington State Superintendent of Public Instruction, Research Report 02-01. 1963.

SUMMARY

Thus far, the surface has just been surveyed enough to illuminate a deeper problem with many complex and subtle facets. The review of the literature in this chapter made no pretext of being comprehensive and exhaustive. Rather its purpose was to highlight the national, university, junior and community college, and high school concern for the dropout. Even though the term "dropout" could be defined differently by each of the above mentioned groups, there is common agreement that, until all levels and types of formal education and training come to grips with this problem our society will continue to be deprived of its most valuable natural resource -- human intellect functioning to its capacity.

This study had its genesis and was predicated on this almost unanimous concern among educators in general, and the Y.V.C. staff in particular, about the apparent inability to meet the needs of its students.

SOME DESCRIPTIVE CHARACTERISTICS OF THE FULL-TIME STUDENT AT Y.V.C.

Chapter III

As stated earlier, one of the major aims to be achieved by this study was the development of a composite profile of the typical full-time student enrolled at Y.V.C. The first chapter presents the criteria which were utilized to select the sample of students for the study. The sample of 2061 contains only those students who were enrolled one or more quarters as full-time students and thus excludes those part-time and evening students who amass credit hours over a period of time but never attain a full-time status. Ostensibly this would appear to produce a biased sample but the proportion of full-time enrolled day students, even though they took evening courses as part of their program, has consistently been far greater than the proportion of part-time students. Also the problem in extricating the data from the registrar's records would have been compounded if these part-time students had been included.

The advantages of taking a somewhat pragmatic, generalized look at the descriptive characteristics of the Y.V.C. student population have already been presented and need not be expounded further. But there are some disadvantages and they should also be considered. First, there is a tendency for persons to identify with certain numbers which coincide with preconceived ideas and beliefs and ignore data to the contrary. This selective perception can be very injurious if it leads to grandiose pronouncements that are supposedly backed up by "empirical research". Besides presenting a false picture of the actual findings this approach to interpretation often tends to stifle further communication by closing one's mind to dissenting evidence. A second disadvantage arises from the uncritical acceptance of the findings. A healthy doubt and objectively critical attitude toward the results produces further questions and channels for exploration and should be encouraged. It is hoped that this study will serve as an impetus to additional inquiry. The first portion of this chapter will be devoted to an examination of the total characteristics of the total sample. The second part will state some general observations concerning the relationships between some relevant variables (Appendix A). Because of the impossibility of anticipating all questions which could be posed the analysis of the various tables will not be exhaustive. Rather general conclusions will be made and the reader may explore any table in depth.

With these statements of qualification the characteristics of the total sample will be examined. Figure 2 presents the descriptive characteristics of the total sample. Several points should be noted as the general findings are considered: (1) the Proximity to Y.V.C. variable percentages appears fairly representative of findings from other sources. The initial calculations produced 481 persons (23.3%) who were classified as Outside State. This data was incongruous with the non-resident percentage values. After a futile attempt to identify the difficulty the decision was reached in consultation with Dr. Schill to delete these persons from this variable. Thus the percentage values will be based on an N of 1580 but it is not expected that this reduction will greatly affect the general conclusions concerning geographical distribution of students, (2) Rank in H.S. Class only has meaning when given with the size of graduating class, and (3) H.S. Size refers to graduating class rather than total high school.

Figure 2

Y.V.C. Dropout Study
Descriptive Characteristics (Percentages)*
of the Total Sample**

*Each percentage is expressed to tenths of a percent.

**The "N" for each characteristic will differ because of lack of data. Therefore, the "N" upon which the percentage values are based is presented with each characteristic.

1. Sex (N=2061) - M (63.1) F (36.9)
2. Resident (N=2061) - Res. (97.4) Non/Res. (2.6)
3. Marital Status (N-2061) - Single (96.8) Married (2.7) Divorced (0.5)
4. High School G.P.A. (N=1961) - 0.00-2.00 (32.9) 2.01-3.00 (55.6) 3.01-4.00 (11.5)
5. College G.P.A. (N=1995) - 0.00-0.99 (16.2) 1.00-1.99 (40.1) 2.00-2.99 (36.6) 3.00-4.00 (7.2)
6. College Division (N=2061) Applied Science (16.1) Biological Science (11.6) Business Administration (19.2) Creative Arts (7.4) Language and Literature (3.3) Physical Education (4.9) Physical Science (2.6) Social Science (18.0) Counseling (16.8)
7. Declared Major (Area) (N=2061) Applied Sciences (16.1) Biological Sciences (7.1) Health Sciences (4.6) Business and Economics (14.8) Business-Vocational (4.4) Creative Arts (7.4) Language and Literature (3.3) Physical Education (4.9) Physical Sciences (2.6) Social Sciences and Undecided (34.8)
8. Total Hours at Y.V.C. (N=2046) - 1-20 (10.0) 21-30 (12.2) 31-40 (14.6) 41-50 (18.4) 51-60 (6.0) 61-70 (4.5) 71-80 (5.7) 81-90 (10.2) 91-149 (18.5)
9. Repeat Hours at Y.V.C. (N=1961) - 0 (38.3) 1-4 (8.2) 5-9 (21.6) 10-19 (24.1) 20-49 (7.8)
10. P. E. Hours at Y.V.C. (N=2061) - 1-4 (91.1) 5-9 (8.9)
11. Birth Order (N=1995) - 1st (43.5) 2nd (29.5) 3rd (15.0) 4th (5.8) 5-10th (6.2)
12. H. S. Size (N=1940) - 1-99 (25.4) 100-199 (23.7) 200-299 (11.0) 300-399 (8.4) 400-499 (22.4) 500-599 (4.8) 600-999 (4.3)
13. H. S. Rank (N=1941) - 1-9 (5.8) 10-49 (27.9) 50-99 (21.9) 100-199 (19.8) 200-299 (11.3) 300-399 (8.4) 400-899 (4.9)
14. Proximity to Y.V.C. (N=1580) - Yakima District #7 (9.7) Yakima County (18.3) Comm. Col. Dist. #16 (2.7) East Cascades (47.5) West Cascades (21.9)

Descriptive Characteristics (Percentages)
Dropout Study - Total Sample

15. Father's Education (N=1949) - H. S. Diploma or Less (71.3) Some College Less Degree (15.3) Bachelor's (10.1) Grad. Degree (2.6) Trade (0.7)

16. Mother's Education (N=1983) - H. S. Diploma or Less (71.6) College Less Degree (15.1) Bachelor's (8.1) Grad. Trade and Other (5.3)

17. Father's Occupation (N=2061) - Professional (13.9) Managerial (14.0) Office (2.0) Sales (13.0) Retired (2.2) Farm Owner (14.7) Skilled (22.3) Semi-Skilled (6.4) Unskilled (5.5) Civil Service (6.2)

18. Mother's Occupation (N=2061) - Professional (8.0) Managerial (2.1) Office (12.7) Sales (5.4) Retired (0.2) Farm Owner (0.2) Skilled (1.7) Semi-Skilled (1.5) Unskilled (2.6) Civil Service (0.5) Housewife (65.1)

19. Method of College Financing (N=1995) - Academic Scholarship (1.8) Athletic Scholarship (1.2) Part-Time Job Only (37.7) Parents Only (14.2) Work Study (0.3) Parents and Part-Time Job (32.8) G. I. Bill (2.5) Other (9.6)

20. Veteran Status (N=2061) - Veteran (1.6) Non-Veteran (98.4)

21. Age at Matriculation (N=2061) - 18 (30.1) 19 (46.3) 20 (16.6) 21-53 (7.0)

22. "Success" Criteria (N=2061) - College Transfer 2 or 4 Year (9.2) 85 Cr. Hr. and 1.75 G.P.A. in 2 Years (23.4) 60 Voc. Cr. Hr. and 1.75 G.P.A. (1.3) "Dropout" (66.0) "Dropout" 85 < Hrs./< 1.75 G.P.A. (1.7) Transfer 85 < Hrs./< 1.75 G.P.A. (0.3)

23. Quarter First Enrolled as Full-Time Student (N=2044) - Summer 1965-'66 and 1966-'67 (2.3) Fall 1965-'66 and 1966-'67 (63.6) Winter 1965-'66 (18.6) Spring 1965-'66 (14.4)

The first point about figure 2 which attracts attention is percentage of only 9.2% of the total who did transfer to either another two-year or four-year institution (Variable #22). Taken at face value this would produce alarm concerning student performance at Y.V.C. and raise many allied questions regarding curriculum, hiring of new faculty, etc. Another factor which should be taken into consideration in this regard is the number of students who probably could have transfered to another institution of higher education. Examining the Y.V.C. college G.P.A. (Variable #5) for all students who completed 12 or more credit hours with a 2.00 G.P.A. or better, we find that 43.8% achieved a college grade point sufficient to allow them the choice to transfer or do something else. The reasons why such a small percentage of students who were potentially capable of transferring but didn't is not definitely known at this time. One factor may be that college G.P.A. included all grades attained, excluding pass-fail, whether in transfer or non-transfer courses. Thus some of the reasons for this apparent discrepancy may be the completion of terminal non-transfer programs such as Registered Nursing, Data Processing, etc. However, even acknowledging this point of potentiality for "success", the salient figure of 66.0% who failed to meet any of the criteria initially stated to be considered "success" cannot be overlooked. It must be re-emphasized that the data reported here only represents the descriptive characteristics of the sample and no attempt is made in this chapter to differentiate "success" from "dropout" with any predictor variable other than #22. Another interesting aspect of variable #22 is the last category - Transfer 85< Hrs./< 1.75 G.P.A. Technically this category should be 0.0% but the fact that it is not raises some questions about the admission policy of some other institutions.

Variable #8 which indicates the total number of credit hours successfully completed while attending Y.V.C. is interesting. The average credit load per quarter is considered to be 15 so a student who averages that many credits will have accumulated 90 hours in two years. Consistent with our criteria of success relating to G.P.A. and amassed credit hours, only 28.7% completed more than five quarters and slightly less than one student in five fully completes a two year program. It is noteworthy that 55.2% of the total sample completed 50 credit hours or less (slightly more than one year) but only 18.5% completed the entire two-year sequence. This variable, like college G.P.A., made no distinction whether the credit hours were transfer or non-transfer so one cannot conclude that the 18.5% had all completed an academic transfer curriculum although all would qualify for the Associate of Arts degree conferred by Y.V.C.

A coarse examination of the data discloses that the vast majority of students are single, state residents, non-veterans, between the ages of 18 and 21 at the point of matriculation to Y.V.C. Also, males outnumber the females about two to one.

The comparison of high school and college grade point averages can be viewed from two points of view depending upon one's frame of reference. The first way to consider the data is by noting the corresponding percentages "2.00 and below" for both variables. The reason the two variables have different categories is a function of computer return format and simplicity in reporting the data. Since the purpose of this chapter is to examine gross descriptive patterns the percentage difference due to unequal categories would be negligible. However, to return to the point in question, approximately one-third of the students enter Y.V.C. with a high school G.P.A. less than 2.00 but slightly more than one-half leave Y.V.C. with a college G.P.A. of 1.99 or less. There is also a corresponding decrease between those "C" students in high school and the percentage achieving average grades in college. The high ability group in high school shows a much less significant change in their secondary and college performance. The obvious conclusion here is that students have difficulty making the transition from high school to college for myriad reasons. Primary and secondary school instruction and facilities, grading practices, and motivation to learn are some examples. The second and equally obvious conclusion is that lower ability students, as measured by high school standards, have much more difficulty adjusting to college than the higher ability students.

The second approach to viewing these same two variables is more positive than the first but the end results are approximately the same. Noting the students with high school G.P.A.'s of 2.00 or better we find that two-thirds of them meet that criteria but only 44% complete their college program with a "C" average or better. This drop of almost one-fourth of the students from average high school students to less than average college grades can either be philosophically rationalized as "what is to be expected" or be examined by asking "Why?" The answer is not immediately forthcoming.

Related to the student's high school performance is the consideration of the size of high school he attended. Variable #12 points up the fact that 25% of the total sample came from high schools with less than 100 in their graduating class and almost 50% came from high schools of less than 200 graduating seniors. The sharp drop in students from larger high schools, except 400-499 (22%) is probably related to the population distribution and school district sizes throughout the state.

A percentage value which was quite unexpected occurred in variable #11, birth order. Forty-three percent of the total sample were found to be the oldest child in the family. It was somewhat surprising because, assuming average ability, the parents have saved for their child's college education and he would be encouraged to begin at the prestigious four-year level. Then as the second, third, fourth child, etc., prepared to enter college, financial considerations would dictate that they begin at the two-year level with the intent to transfer. The percentage figures of this study would tend to refute that hypothesis. One must conclude from the findings that birth order apparently plays a minor role in determining the size and choice of college, all other factors involved in this decision held constant.

A reiterated word of caution is in order when considering the significance of the percentage values for variable #9. It has already been pointed out that there is no way of determining whether the hours were non-repeated F grades or were repeated F and/or D grades. With that qualification, however, it is informative to note that slightly more than one-third of the sample did not have any "F" grades or repeat hours and slightly less than one student in ten had 4 credit hours or less of failing work. As the credit value for courses at Y.V.C. is now established the student could not have failed or repeated more than two courses, excluding P. E. activity courses. The probability is that the majority of students had difficulty with one three credit course.

It is cause for concern, although the figures for college G.P.A. bear it out, that one student out of every five in the sample failed or repeated from 5 - 9 credit hours and almost 25% had 10 - 19 hours of difficulty. This could raise the issue of grading standards and whether or not a student should be allowed to explore areas of interest without the fear of damaging his G.P.A. but the data is too limited to draw sweeping generalizations about such possible causes as counseling and advising, mandatory placement in certain curricula, grading practices, student motivation, etc. It does suggest the need for further exploration in this area, however.

A comparison of the educational level of the student's father and mother provides some salient information for consideration by the college. Seven out of every ten fathers and mothers have only a high school diploma or less formal education. Only 13% of the fathers hold a college degree although 28% have had some college experience. The percentage figures for both parents through the Bachelor's degree are quite similar and a table has been prepared in Appendix A which illustrates the relationship between their various educational levels. If there is a valid relationship between the fact that most of the parents had only a secondary education and yet almost one-half of the oldest children were in college, some inference might be made about the increasing emphasis by families to encourage their children to gain more education than they achieved. To some degree, the formal educational level of the parents also has an indirect reflection to the type of community structure surrounding Yakima Valley College.

One would expect that the occupational level achieved by the parents would be directly related to the amount of formal education and the data, in a gross way, displays that relationship. This was somewhat surprising considering the necessary subjectivity involved in categorizing the data for variables #17 and #18. The 15% figure for farm owner in variable #17 should have occurred since the Yakima Valley is dominated by agriculture and fruit orchards as a major industry. There were a small number of professional occupations due to the small percentage of persons having college degrees. The percentage figures for managerial, sales, and skilled labor occupations could be accounted for by a high school diploma.

Two-thirds of the mothers stated their major occupation as housewife with the remaining one-third actively engaged in work outside the home. The professional category for women coincides with their formal training as does the other categories, especially office work. Thus the occupational level of the parents, when combined with their educational level, provides an inferential picture of the general population and economy surrounding the college and this data could have some relevance in long-range planning decisions at Y.V.C. It is recognized, of course, that those parents who send their children to college might not be a random sample of the area population but it was outside the scope of this study to make an accurate determination of that possibility.

The vast majority of students in the sample planned to finance their college tuition and other expenses in one of three ways: (1) Part-time job only, (2) Parents only, or (3) A combination of parents and part-time job. Only 10% in the "Other" category indicated they had some savings or other financial reserve at the time of entrance to college. These facts would seem germane to the future development of a financial aids and part-time job placement program as part of the student personnel program at Y.V.C. As students enter they appear to have a fairly narrow financial base as 37% must rely initially on a job to sustain their college education. When one combines the facts (1) parents appear to be the only other major source of income, and (2) the parents occupational and educational level and the annual income that is normally commensurate with it, the definite impression is left that the student is hard-pressed for meeting college expenses right from matriculation. This initial and continual concern over finances should have some effect on the student's attempt to make the transition from high school to college.

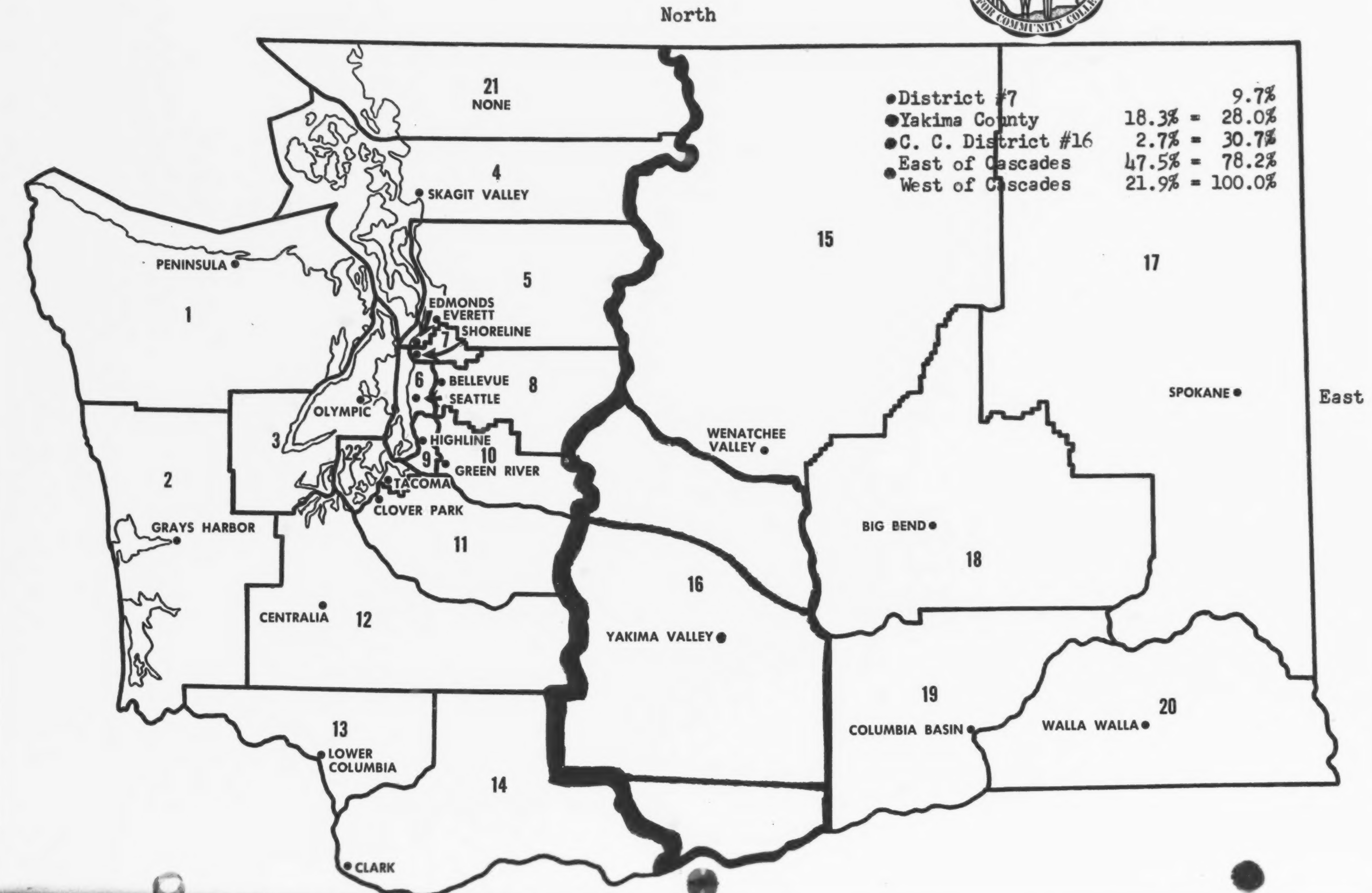
Pursuing the last point further, attention is now directed to variable #14, Student Proximity to Y.V.C. (Also see figure 3.) The desire in the embryonic development of this project was to ascertain the extent and distance of the commuting students. The data was simply not available in the accessable records so the next alternative was to utilize high school code and determine propinquity to Y.V.C. Even though this determination of geographical distribution of students would not directly provide the desired information, some inferences could be made. The percentage values seem to be congruous with information gleaned from other sources. Students East and West of the Cascades would probably have to acquire housing facilities close to the college and would not normally be considered commuters. The likely commuters out of all categories are those students in District #7, Yakima County, and Community College District #16 (30.7%). There is no way to be certain of the accuracy of these figures with regard to commuting patterns, however. All that can be said with assurance is that the approximate locations of the high schools sending students to Y.V.C. were established.

The reason for the desire to know something about commuting patterns is their connection to expenditure of money for college and time taken away from study. All of the evidence suggests that more knowledge about the commuter at Y.V.C. is needed.

Finally, variables #7 and #8 showed the student's declared major as he matriculated and the college division in which he enrolled. There are distinct similari-

Figure 3

State of Washington
THE COMMUNITY COLLEGE SYSTEM


North
East
21
NONE
4
SKAGIT VALLEY
PENINSULA
1
5
EDMONDS
EVERETT
SHORELINE
7
6
BELLEVUE
SEATTLE
8
OLYMPIC
3
2
22
HIGHLINE
9
10
GREEN RIVER
TACOMA
CLOVER PARK
GRAYS HARBOR
11
CENTRALIA
12
13
LOWER COLUMBIA
14
CLARK
15
WENATCHEE VALLEY
16
YAKIMA VALLEY
17
SPOKANE
BIG BEND
18
19
COLUMBIA BASIN
WALLA WALLA
20

●District #7		9.7%
●Yakima County	18.3% =	28.0%
●C. C. District #16	2.7% =	30.7%
East of Cascades	47.5% =	78.2%
●West of Cascades	21.9% =	100.0%

ties to be expected between the students' choices of major area and the division they enter. The four large divisions accounting for 70% of the students include Applied Science, Business Administration, Social Sciences, and Counseling. The latter division is created during registration to assist students who are undecided about a college major or those who need special counseling because of limited abilities and poor academic records. Approximately one student in five enters the Business Administration division and about the same number go into one of the Social Science departments. The Biological and Health Science majors constitute slightly more than 10% of the total sample. Based on the remarkable degree of similarity between college division and declared major it appears safe to conclude that almost 17% of the students are undecided or only desire a general liberal arts program as they enter. It is also quite probable that this 17% is an underestimation when one considers the change of majors and the fact that the majority of students do not complete the two year program and college G.P.A. requirements which would allow them to transfer and complete their avowed choice of training. This has definite implications regarding the student's awareness of himself and the reality of the world around him. This apparent lack of awareness and resultant frustration which is displayed by a failure to successfully reach one's stated goal is something the college should address itself to in considering student needs and how to help them.

The Relationship Between Descriptive Variables

Time considerations plus the inability to anticipate the types of information desired dictated that the treatment of the relationship between some of the descriptive variables be brief. The observations which follow were merely those which were quite obvious and those which received colaborating evidence from more than one source.

Sex

The first tables to be noted relate Sex with Marital Status and Age at First Matriculation to Y.V.C. The age distribution of the sexes is revealing although the reasons for it are obscure. The male to female ratio for each age group quite closely approximates the ratio for the total sample. It is interesting that 18 year olds comprise only 30.1% of the total N while 19 year olds number almost one-half of the group. Thus 75% of the sample is less than 20 years old. The data would seem to suggest that many students remain out of school one year before embarking on their college career but this does not coincide with findings from other sources. The reason for this discrepancy is unclear at the present time.

The next set of tables which deserve mention were those which compare Sex vs. Declared Major and Sex vs. College Division. As would be expected, the relationship between these tables was quite high. As one examines each college division, the percentage of males to females provides some idea of the sexual distribution for various majors. Those college divisions having a greater male to female ratio were Applied Science, Business Administration, Creative Arts, Physical Education, Physical Science, and Undecided. Conversely, those divisions with a greater female to male ratio were Biological Science, Language and Literature and Social Science. Attempting to speculate why these ratios existed in terms of the various programs offered within each division would take the discussion too far afield. Another factor which should be kept in mind here is that the males outnumbered the females two to one for the total sample. This has special relevance for the ratio of undecided students.

A detailed look at the tables which relate Sex vs. High School G.P.A. and Sex vs. College G.P.A. seemed in order. Thirty-nine percent of the males had a H. S. G.P.A. below 2.00 when they entered and 61.1% left Y.V.C. with less than a

2.00 college G.P.A. The females showed a lower number below 2.00 (21.8%) but that figure more than doubled when they left (48.1%). Both sexes dropped about 20% when considering those students who entered with a "C" average and those who left with a "C". The "B" and "A" students (3.00-4.00) provided some interesting contrasts. The females outnumbered the males better than three to one in this category from high school. The males, however, had a much higher proportion who maintained that status in college while almost 50% of the females who entered with a "B" average or better left with less than a "B" average. One can speculate why the women had such a significant decrease when their high school grades said they had such potential. Lest these statements imply something they were not intended, it should be made clear that only 11.5% (226) males and females had "B" or "A" averages in high school so these contrasts may seem spuriously high. The trends still remain, however.

The table Sex vs. Total Hours Completed at Y.V.C. should indicate which sex tends to leave college earlier. It was already pointed out earlier in the chapter that only 18.5% complete a full two-year program while slightly better than 50% complete at least one year. Of that 18% who finished, the males outnumbered the females better than two to one. Fifty-eight percent of the 757 women completed 50 credit hours or less but only 15.7% completed more than 90 hours. Only 53% of the 1289 males completed 50 credit hours or less but 20% of them completed more than 90 hours. Both sexes appear to remain at Y.V.C. for slightly more than one year and then leave. Approximately 5% more females than males leave at that time. Why they leave is another question.

More females than males were on academic scholarships while the converse was true for athletic scholarships. There was a three to one ratio of males holding a part-time job only to finance their education while it appeared that more women than men were using their parents as the sole source of college money. Finally, there was a three to two ratio of males using a combination of parents and part-time job to defray college expenses.

High School G.P.A.

The chi square value between High School G.P.A. vs. College G.P.A. showed a very strong relationship. It almost suggested a self-fulfilling prophecy. If a student got a "C" average in high school it would be virtually assured that he would attain a "C" average in college. Obviously the data on this table belied that conclusion to some degree although it colaborated the earlier gross statements between these variables. It should give the college some points to ponder as they examine their curricula and methods of instruction.

The one outstanding conclusion, although not a surprising one, from the relationship between High School G.P.A. and Number of Repeat Hours was that students with lower G.P.A.'s have more "F" or repeat hours compared to students with higher G.P.A.'s than would have been expected by chance.

The table which expressed the relationship between H. S. G.P.A. vs. Total Hours Completed at Y.V.C. tended to follow the pattern set by the two previous tables. Only 12.7% of the students with a H. S. G.P.A. of 2.00 or below completed a two year program at Y.V.C. while 61.8% of students with "C" grades in high school completed two years and 25.5% of the "B" and "A" completed 91 or more credit hours. The conclusion to be drawn at this point was that how one performs in high school does make a difference on what is done in college performance.

The findings of the table which compared H. S. G.P.A. with College Division were not expected. Normally it would be thought that the high school G.P.A. one earned would be independent of the college division he chose but the chi square value indicated that such was not the case. The fact that the variables were related meant that ostensibly high school G.P.A. did make a difference in determining the division the student selected. The only plausible explanation at this point was the probable effect of declared major. If a student performed poorly he was not likely to select a major in the Physical Sciences or Languages and Literature since these divisions had significantly higher H. S. G.P.A.'s than would have been expected by chance. Rather, the lower ability students selected Business Administration, Physical Education and remained Undecided significantly more than chance.

High School Rank

A table which contained a great deal of relevant information as well as being a reference point for inferences from other tables was High School Rank vs. High School Size. It was necessary to have some idea of the ability level of students from various sized high schools to ascertain what effect this factor had on subsequent performance at Y.V.C. The overall impression gleaned from this table and this sample was that Y.V.C. received the middle ability students from the small and middle-sized high schools and the lower ability students from the large high schools. This was substantiated by the table H. S. G.P.A. vs. H. S. Size. Of those high schools with less than 100 in their graduating class, 27.4% had less than a H. S. G.P.A. of 2.00 while high schools of 500-599 and 600-899 had 50.5% and 52.4% respectively in the same category. Better than 10% of the students in each of the H. S. Size categories 1-99 and 100-199 had 3.00 H. S. G.P.A.'s or better while the schools over 500 had only 5%. The trend was still the same.

Since it had already been established that a significant relationship existed between H. S. G.P.A. and College G.P.A. and now something was known about H. S. Rank, the next step was to examine the tables H. S. Rank vs. H. S. G.P.A. and H. S. Rank vs. College G.P.A. Both tables again supported the conclusion of the preceeding paragraph. An examination of the former table-column percentage values for a high school rank from 1-9 and 300-399, disclosed that the percentages almost reversed themselves: 0.00-2.00 = 1.8%, 2.01-3.00 = 26.6, and 3.01-4.00 = 71.6 while the other percentages were 75.6, 23.7, and 0.6 respectively. The same trend may be seen upon a review of the College G.P.A. vs. H. S. Rank table. The poorer ability students from the bigger high schools did poorly in their college work. Since it had already been established that a direct relationship existed between high school and college performance these tables merely provided one more reiteration of the well known fact that the students high school performance, so reflected in high school rank, becomes a significant predictor of success in college.

College G.P.A.

The gist of the table which indicated the relationship between College G.P.A. and Total Hours Completed was that as the number of credit hours successfully completed increased the college G.P.A. increased. Thus those students who remained longer at Y.V.C. tended to be the better students while the poorer students left much sooner. It appears that many of the poorer students became frustrated by learning, as reflected in earned grades, and left after one year while the students with higher performance remained longer. This should not imply, however, that poor grades were the sole criterion for dropping out but the question of meeting student needs and providing them with meaningful learning experiences cannot be evaded.

Reference is also made to the table Sex vs. Total Hours Completed at Y.V.C. for a more detailed breakdown although these two tables dovetail in their findings. Although the tentative conclusions sound like statements of the obvious they take on more meaning when considered against earlier findings about high school performance as a valid indicator of subsequent college performance. The fact that many students don't perform as anticipated should produce many probing questions.

One of the more important findings of the table which compared the student's Method of College Financing vs. College G.P.A. was that the chi square value was not significant. Seemingly, how one finances his education bears little relationship to how well he does in college.

Proximity to Y.V.C.

The data derived from the various relationships of student propinquity to Y.V.C. proved to be most interesting. The table Proximity to Y.V.C. vs. College G.P.A. disclosed that the G.P.A. was lower for those students West of the Cascades. When examining the data from the various locations as discrete categories we find that approximately 30% of the students from Yakima County failed to meet the minimum G.P.A. to be considered "successful" while 49.7% had a 2.00-2.99 cumulative G.P.A. The same categories for students from East of the Cascades were approximately 36% and 43.4% respectively. Fifty-three percent of the students West of the Cascades had less than a 1.75 G.P.A. and only 31.5% attained a 2.00-2.99 college G.P.A. Viewing the data in each column, discrete college G.P.A. categories, produces the same conclusions regarding propinquity and college performance. When the data on this table was compared to the College G.P.A. vs. High School Size table one could speculate that the larger high schools sending the poorer students were probably located in King and Pierce Counties.

The table Proximity to Y.V.C. vs. Total Hours Completed gave the distinct impression that students in Yakima County and Community College District #16 remained around Yakima Valley College and took more credit hours than students outside the district. Students living at home, austere college budgets, the desire to complete a two-year terminal program, and the fact that lower ability students in greater proportions came from outside the college district and were the first to leave were undoubtedly factors which bore on that finding.

When reviewing the statistics which indicated the declared major a student chose as it related to proximity, it was found that students from Yakima School District #7 predominately selected academic programs while those outside District #7, especially Yakima County and Community College District #16, were more likely to choose an occupational program. One could hypothesize about the reasons for this but there was no supporting evidence currently available.

SUMMARY

The preceeding paragraphs have been devoted to an examination of some characteristics of the total sample of students included in the study. Every reasonable attempt was made to make the sample broadly representative of the population from which it was drawn so some tentative generalizations could be advanced about the latter group. The predictor variables were examined pragmatically with a few attempts to hypothesize relationships between various combinations. Deadline considerations greatly limited the opportunity to tease out all of the significant interrelationships between variables. However, the data is available in tri-matrix percentage tables which have been appended to this report. The reader is invited to examine in detail those tables which express the relationship between variables relevant to his specific interests. In time all of the tables will be reviewed in greater detail to supplement the essence of this chapter but the information provided should serve as a frame of reference and stimulant to further questions.

CONTRASTING THE "SUCCESSFUL" VS. THE "DROPOUT" STUDENT AT Y.V.C.

Chapter IV

Introduction

After the general descriptive characteristics of the total sample had been ascertained the second phase was instigated. The reasons for identifying predictor variables which would be likely to differentiate the "successful" from the "dropout" student have already been stated and need not be reiterated. Due to a lack of real knowledge concerning the characteristics of the "dropout" it was necessary to take a heuristic approach and state the null hypothesis (H_o) as our working hypothesis. It would be a pleasant surprise if the H_o could be rejected and an alternative hypothesis (H_1) indicating a real difference between the two groups for a particular predictor variable be accepted. In the previous chapter, the concern was primarily with the gross student characteristics and secondarily with the significance between the variables with no attempt to establish a prior level of statistical significance. Rather, the probability level associated with the findings was reported with the appropriate tables in Appendix A and the H_o may be rejected at that level.

Since it was necessary to reach an objective decision as to whether the H_o would be confirmed or rejected by the data, a significance level had to be established prior to data collection. It was decided that for the general purpose of this study, and given a sample N of 2061, the .05 level would be acceptable. This level of confidence would minimize the probability of committing a Type I error and this established level plus the large N would reduce the possibility of making a Type II error as well.

It is acknowledged that the predictor variables utilized for this project were not meant to be exhaustive of all the potential factors having a bearing on student success. Such data as part-time job and commuting patterns were suspected to have an influence on the length of stay and performance level of the student but the data was not accessable. It appears, however, that it may have been fortuitous that the data was not available because a current study describing the graduates of two-year colleges by Baird, Richards, Jr., and Shevel[17] concluded that working and/or commuting had little effect on the college experiences or achievements of two-year college students. In any event the available information will provide grist for the mill and open new avenues of exploration.

After a perusal of the findings in Chapter III it was decided that the data was amenable to the computation of a Chi Square value to ascertain the relationship between the various "success" criteria and nine predictor variables. They were as follows: Sex, Age at Matriculation, High School Grade Point Average, Declared Major, Proximity to Y.V.C., Birth Order, Father's Occupation, Father's Education, and Mother's Education. Since College G.P.A. was part of the definition of "success" it could not be utilized as a predictor variable. The same rationale excluded Total Hours Completed at Y.V.C. However, both tables are included at the end of Appendix B for the descriptive information they contain. Also, since the number of repeat hours would effect college G.P.A. and hence effect "success" it needed to be extricated from consideration.

Although the table relating college G.P.A. to "success" could not be utilized it did reveal an interesting bit of information. Out of the 190 students who were considered "successful" because they transferred to another college, 38.6% were admitted with a college G.P.A. less than 2.00. This was certainly noteworthy regarding the admission practices for transfer students at both the two-year and four-year college levels. Undoubtedly there is much more that enters into the decision to admit a student than just his grade point average.

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[17] Baird, Leonard E., Richards, Jr., James M., Shevel, Linda R. A Description of Graduates of Two-Year Colleges. American College Testing Program Research Report No. 28, January, 1969.

Another factor which should be pointed out is that the college transfer "success" criteria which was ultimately selected did serve the general purposes of the study. However, there are alternative ways to view college transfer percentage figures which may produce decidedly different interpretations. For example, one could contact each of the four-year colleges and universities in the state and ascertain what percentage of the total transferees entering the university each year came from Y.V.C. This value would give the college an idea of its feeder potential to the various four-year schools as compared to other community colleges. Also, the determination of percentage of transferees who eventually receive a degree would be meaningful for college planning purposes.

The tables in Appendix B, with the exception of the one relating Declared Major to "success", only contain three discrete categories relating to the "success" criteria. The original category, 60 vocational credit hours with a 1.75 or greater college G.P.A. constituted only 1.3% of the total sample (27 students). This produced many negligible cell frequencies and greatly affected the resultant Chi Square value. In an effort to correct this condition and produce more meaningful results, the vocational criteria for success was combined with the 85 credit hour category.

Relationship Between Each Predictor Variable and the Various "Success" Measures

Each predictor variable will now be examined in succession to establish its potential for distinguishing between the student who is likely to reach his stated scholastic achievement level and the one who may not attain his goal. Prior to that, however, a table will be presented to show the significance level of each variable as it relates to assessing potential success.

Table I

Significance Level Between Nine Predictor Variables and the "Success" Criteria

Predictor Variable	χ^2	df	P
Sex	21.859	3	<.001*
Age at Matriculation	7.145	6	.50 </<.30
High School G.P.A.	178.710	4	<.001*
Declared Major	20.291	11	.05 </<.02*
Birth Order	5.302	8	.80 </<.70
Proximity to Y.V.C.	100.503	4	<.001*
Mother's Education	8.423	6	.30 </<.20
Father's Education	14.405	8	.10 </<.05
Father's Occupation	29.714	14	.01 </<.001*

*Significant beyond the pre-established .05 level of confidence.

The P connotes the strength of the relationship but it is not possible to directly denote which discrete predictor variable category differentially predicts "success" vs. "dropout". Inferential statements about the probable relationship can be hypothesized from table trends, however.

Sex

It is noted that the student's gender is a very significant predictor in ascertaining whether collegiate success is likely. To reiterate, it is not possible to differentially predict except by inference. The ratio of males to females who drop out (60.6-39.4) is within 3% of the male-female ratio for the total sample (63.1-36.9%). Also the proportion of males to females who transfer is approximately 2 to 1 but the ratio is slightly higher for males than for females. Supporting this observation is the data for percentage of males and females who drop out. Sixty-three percent of all the males dropped out while 70.4% of all females dropped. Thus a slightly greater proportion of females leave college prior to successful completion of their stated program and, conversely, a slightly smaller proportion of females transfer. Why this appears to be the case is left open to conjecture but one might well ask questions about the reasons a female attends a community college.

A comparison of the row percentage values for the 85 credit hours and 60 vocational credit hours "success" categories discloses that the male-female ratios are reversed. The latter category only has an N of 27 though. It is quite likely that the latter category includes many females in the various health science career fields. When viewing the percentage values for the total sample it is noted that the males to females ratio is 2:1. One-fourth of all the males completed 85 credit hours with a 1.75 G.P.A. or better while only one-fifth of all the females were in the same category. Thus the salient conclusion from this table seems to be that the male students are more likely to remain at Y.V.C. longer and are slightly more likely to transfer than the female students. There are many factors, both tangible and intangible, which have a bearing on this trend and one should not make definite pronouncements from such limited findings. The trend cannot be ignored, however.

Age at Matriculation

The student's age as he matriculated to Y.V.C. was found to be a non-significant predictor of student success. Twenty percent of the total sample were 18 year olds but 30% of all 18 year olds dropped, thus indicating a 10% increase. The 19 and 20 age groups showed a 15% and 6% proportional increase respectively. This data coincides with the findings on the total number of hours completed at Y.V.C. in Chapter III. Approximately 30% of all dropouts were 18 year olds which would seem to imply that they dropped out either during or at the end of their first year in college. Forty-five percent of all the dropouts were 19 year olds. This group would include those students who enrolled as 19 year olds and dropped out the same year but it is more plausible to assume that the majority of this group were students who left Y.V.C. during their second year. One-half of all college transfers were in the 19 year old age group which is a slightly greater proportion than that age group constitutes within the total sample (46.3%). It is interesting to note that 7% of the total sample were in the 21-55 age range, yet 68.7% of that group were classified as "dropouts". Also, two-thirds of the 18 year olds dropped out while 7 out of 10 19 year old students left Y.V.C. The high percentage in the latter category could be expected since they would either be leaving to seek employment, enter the military, get married, or for various other reasons. Even with these observations, however, the fact that the row percentage values correspond closely with percentage values in each age category and likewise, the column percentage values corresponding with each "success" category means that there was no discernable trend that would establish this variable as a differential predictor.

High School G.P.A.

To probably no one's surprise, the student's H.S. G.P.A. is found to be a very significant predictor of student success at the college level. Thus the higher the G.P.A., the less likely one is to drop out before completing a program of studies. The trend in the table is very obvious; better than four-fifths (84%) of the students with a H.S. G.P.A. of 0.00-1.99 drop out, approximately two-thirds (65%) from 2.00-2.99, and slightly more than one-third (38.8%) of the students with a "B" to "A" grade average leave college. The column percentage for the other two "success" criteria display the trend equally well. As the high school G.P.A. increases the student is more likely to succeed and less likely to fail.

It was quite interesting to note that while slightly more than 6 out of every 10 students who transferred to another college initially had a H.S. G.P.A.

in the "C" range, almost as many transferred who had a cumulative G.P.A. less than 1.99 (18.9%) as those who had entered college with a "B" average or better (20.0%).

Declared Major

It was found that what major one chose apparently made a difference in the likelihood that he would be successful. The data for this table was obtained on the first pass through the computer and hence was based only on the N of "successful" students while the total sample N included "dropout" students. Therefore, the figures in this table are spurious and should be treated with caution.

It does not seem unreasonable to expect that this predictor variable would be a discriminating factor, however. In a paper presented to the Washington Pre-College Testing Program Research Committee, Dr. Clifford Lunneborg and Dr. Thomas Langen pointed out that the course content and academic skills required of the student may differ for an introductory scholastic course area that is "theory-applied" vs. an "applied-technical" area.

> An introductory area ordinarily contains courses numbered below 300. An area defined on this basis ordinarily contains courses whose enrollment is large consisting of a majority of non-specialists, non-major under classmen. Course grades in this type of area tend to be based on objective examinations. Such an area's course examinations and assignments generally lay stress upon deductive and analytic types of reasoning as well as elementary classroom skills of the "read and memorize" variety. The study material in such courses tends to be broad, unspecialized, non-theoretical.
>
> The courses in a "theory" area in brief are the academic ones of a department whose primary (or secondary) purpose is the application (either technical or aesthetic), practice or research development of a discipline. Such courses survey the theoretical or factual background of an applied or practiced discipline. Lectures, reading, problems, papers and project assignments typify the mode of presentation of the lecture course. Grading depends upon written examinations and term papers or projects. Success in such a course hypothetically depends to a great extent upon deductive reasoning, verbal comprehen-

> sion and interpretation, and memory.
>
> An "applied technical" area contains the laboratory, technical and manual training courses in a department whose primary (or secondary) purpose is the application or practice of a discipline. In the physical sciences this type of area involves the laboratory courses which may exist either alone or as a section of a lecture course. In nursing this area contains courses which emphasize ward, surgery and clinic experience. In drama, communications and architecture this area contains the more non-creative courses which stress technical topics such as lighting, accoustics, materials, broadcasting. Such courses typically occur in a laboratory, a shop, a hospital ward, a studio, an office. Grading of such courses hypothetically involves the rating of variables not conventionally related to academic achievement. Success in many courses of this type depends on non-academic factors such as motor dexterity, mechanical comprehension, graphic abilities, personality. The courses require inductive, synthetic types of reasoning.[18]

Finally, the fact that many of the declared major areas provide too small a sample for reliable prediction needs to be taken into consideration. Nevertheless, the significance of the relationship is such that further studies in this area should provide valuable data for future student counseling and advisement into programs suited to one's talents.

Birth Order

The fact that the student was the oldest or youngest child in the family seemed to make very little difference in determining his potential for success. Approximately 66% of each birth order category drop out, about 9% in each birth category transfer to another college or university, and about one student in four completes 85 credit hours with a college G.P.A. of 1.75 or greater. The fact that the row and column cell percentage values so closely coincide with the total row and column percentage values respectively provides very little information for establishing trends.

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[18] Lunneborg, Clifford E. and Langen, Thomas F., Washington Pre-College Testing Program Summarization of Achievements, General Discussion. Structure of Course Area Categories. Paper submitted to W.P.C.T. Research Committee Meeting, University of Washington, February 28, 1969.

It is worthwhile to note that the oldest, second oldest, and third oldest comprise almost 88% of the total sample and the first born constitute almost one-half of that group.

Proximity to Y.V.C.

It was necessary to collapse the data to make the individual cell frequencies large enough to produce a significant Chi Square value and this distorted the discrete proximity categories. Even with the slight distortion, the significance level which was obtained strongly suggested that where a student came from (high school) made a real difference in his likelihood of success. When this data was combined with the table in Chapter III which related high school size to rank in graduating class the trend in this table was substantiated. To quickly reiterate, it was found earlier that Y.V.C. received the average ability students from the small and medium sized high schools and the lower ability students from the very large high schools of Washington. The trend shown in this table indicates that students from Community College District #16 are less likely to drop out than students from high schools West of the Cascades. About 10% of the dropouts came from District #16, almost 25% came from East of the Cascades and 66.1% of the dropouts originally came from high schools West of the Cascades. The same trend is shown if one examines the percentage values of dropouts within the total sample which are 6.1%, 15.4%, and 41.9% respectively.

A much higher proportion of students West of the Cascades transferred to another college than students from District #16 or students from East of the Cascades but the college transfer N is only 190. Supplementary to this, a much higher proportion of students in Community College District #16 (49%) completed 85 credit hours with a G.P.A. of 1.75 or better than did students from West of the Cascades (18.6%). This table distinctly reflects the holding power of Y.V.C. for students in its immediate vicinity and East of the Cascades as contrasted with those students from the Pacific coast of Washington. Related to this are such factors as curricular offerings, commuting students, economy of the area, etc., so any definitive action regarding the utilization of this variable for differential prediction should be predicated on these elements.

Mother's Education

The Chi Square value for this predictor variable approached the established significance level but was not quite high enough for acceptance. This factor may possibly have an influence on the student's eventual performance but one should be cautious in considering such a conclusion. Seventy-four percent of all dropouts had mothers who had achieved a high school diploma or less formal education while the percentage figure dropped to approximately 15% if the mother had had some college training. This finding was also reflected in the total sample percentage values for the "dropout" category (48.9% vs. 9.4%). Thus a student was more likely to become a dropout if his mother had only a high school education or less and much less likely to leave if she had some college background.

As the mother's educational level increased up to and including the baccalaureate degree the percentage of students who transfer also increased (8.4%, 10.3%, and 13.7% respectively). This has an indirect reference to the mother's intellectual level and her encouragement of further education for her offspring.

Father's Education

This variable, like the preceeding one, could quite possibly have a bearing on student success although it too has a borderline significance level. Of the 1361 dropouts in the sample, 73% had fathers with a high school education or less. If the student's father had some college experience the dropout rate dropped to 13.6% and only 9.6% of the dropouts came from families where the father held a baccalaureate degree. The same trend is reflected in the percentage values each "dropout" cell constitutes of the total sample. Almost one-half of the total sample (48.2%) were dropouts with fathers having a high school education while less than one student in ten (9%) of the 2061 dropped out if his father had had some higher education.

The column percentage values for college transfer "success" category show a concommittant increase with father's education, although it drops slightly for father's holding the bachelor's degree (8.1%, 13.0%, and 11.2%). Thus, like mother's education, when the father becomes more knowledgable as reflected in attained level of formal education, his child is more likely to meet the criteria for success and less likely to drop out. Similarly this conclusion also reflects the father's erudition, intellectual ability, and the value placed on higher education in the home.

Father's Occupation

The final predictor variable to be considered was the father's occupation and it was found to be a crucial factor in determining whether the student was likely to succeed or not. There were some percentage deviations within and between the various cells of this table but they were of such small magnitude as to make meaningful generalizations difficult. It did appear, however, that as the skill level required in father's occupation increased there was slightly less chance that the youngster would drop out. This conclusion was, of course, related to the fact that as skill level requirements become more stringent a higher level of training is required to meet them and one can then refer back to the findings regarding father's educational level.

The student was found to be more likely to transfer if his father was engaged in either a skilled, farm owner, office and sales, managerial, or professional occupation and was less likely to continue if his father was semi-skilled or unskilled. The father's occupation would also have a bearing on his annual income and his potential for assisting the student to complete a four-year program.

Of all students who completed 85 credit hours with a 1.75 G.P.A., almost one-fourth (23.3%) had fathers in the skilled category and one-fifth (19.8%) had fathers who owned farms or were retired. Again the lowest categories were semi-skilled, unskilled, and civil service. It is possible that students from the Yakima Valley area are acquiring some training related to their father's occupation although this is a tentative hypothesis.

It was interesting that the total percentage values for the dropout category were higher for the professional through skilled occupations and much less for the semi- and unskilled occupations. Why this occurred was not known, although it was observed that the latter three categories, semi-skilled, unskilled, and civil service, combined only constituted 18.1% of the total sample. In any event, what a student's father does to earn a living has a significant effect on whether the former will probably be successful or not.

Summary

This chapter has examined nine predictor variables as they relate to predicting ultimate success or the likelihood of a non-completed program at Y.V.C. Five of the variables, sex, high school grade point average, declared major, proximity to Y.V.C., and father's occupation, were found to be significant predictors. Both father's education and mother's education were close to the significance level established prior to the analysis and could thus be an influence on the student's intellectual capability and desire to learn. Finally it was discovered that the student's age at matriculation and his birth order were non-significant factors relating to scholastic success.

Some observations concerning the percentage values within each table were quite illuminating and they suggest the need for future studies to explore their ramifications.

PROJECT SUMMARY

Chapter V

As this study nears fruition there is a need to consolidate and summarize the findings. This requires that one detach himself from total involvement, pause, and reflect on such questions as: What were the reasons for instigating such a project? What were the stated goals and were they realized? What were the highlights of the study and were the results expected? What changes in research design and methodology would be made if the study were repeated? And, finally, was the study worth the time, effort, and money expended? An answer to these questions should provide an overview of this project.

The summary will be abbreviated since a complete answer to all of the questions would, in essence, be a restatement of the entire report. Also, if some of the conclusions are taken out of their context the effect could be more deleterious than beneficial. Therefore, this review will be rather general and the reader should peruse the report body relative to his specific purposes.

The study was instigated last May to accomplish a two-fold purpose. The first was to attempt to take a descriptive look at the Y.V.C. student body over the past three to five years. The second major aim of the study was to determine whether any characteristics of the "dropout" differed significantly from those who successfully completed their program of study. These goals were met and, with a few minor exceptions, the results exceeded the original expectations. Also a significant by-product of the project was the creation of college staff interest and encouragement to further intra-college communications.

It was quite difficult to define "success" and "dropout" as well as many of the predictor variables. Many categories were not adequately delineated simply because the data was not available in the desired form. However, some decision had to be made for the study to continue so, fully acknowledging the arbitrary and very nebulous nature of any such dichotomous distinction, the following criteria for "success" were determined: (1) The student transferred to another two-year or four-year institution of higher education (subsequent performance not considered); or (2) Completed 85 or more quarter hours at Y.V.C. with a G.P.A. of 1.75 or better within a two-year period of time; or (3) Completed 60 vocational credit hours with a G.P.A. of 1.75 or better. Any student who failed to meet any of these criteria was considered as a "dropout". Of the 5300 full-time students who had enrolled at Y.V.C. from summer quarter 1965 through spring quarter 1968, 2061 (40%) fit the criteria stated above and were included in the study. All of the results and conclusions contained within this paper were predicated on the definitions which were just cited.

The first phase of the study involved the establishment of a composite profile of the "typical" full-time student at Y.V.C. The following highlights were predominately what was anticipated but there were some surprises:

> The majority of the students were single, residents, non-veterans, and between the ages of 18-21 at the time of matriculation to Y.V.C. There was also a 2:1 male-female ratio.
>
> A comparison of the high school and college G.P.A. for these students disclosed that many of them have difficulty making the transition to college and drop out. Whether the discrepancy between the two grade averages reflects evaluation practices at the high school or college level is not known.
>
> The college appears to be attracting the average ability students from the small and medium sized high schools and the lower ability students, as reflected in high school rank, from the large high schools.
>
> Y.V.C. seems to have a greater holding power for students from Community College District #16 and students East of the Cascades than for students from high schools West of the mountains.

The majority of parents of these students have only attained a high school level of formal education or less.

The students appear to have a very narrow financial base with little cash reserve to support their education as they matriculate. The two major sources of revenue are part-time job and/or parents. When this information is coupled with the probable income level of parents with a high school education the importance of the part-time work becomes paramount. This has implications in terms of job availability in the Yakima Valley and effect on the student's adjustment to the college regime.

Four college divisions, Applied Sciences, Biological Sciences, Business Administration, and Social Sciences account for the majority of declared majors. It is quite revealing that, excluding the Applied Science students, 84% of the entering students have a declared academic major. The undecided category was also considered to be a declared transfer student because the majority of these students state their intention to transfer but are just uncertain as to their choice of vocation. However, it is not possible to complete a major, excluding the terminal vocational-technical programs, at a community college so the student must transfer if he is to complete his avowed intention. The fact that only 9% of the total sample did go on and, excluding students who earned grades in non-transfer courses, only one-third had a college G.P.A. which gave them an option to continue or not is salient. The vast majority had to change their initial decision but this was not usually done in consultation with the college staff. They just dropped out for various overt and covert reasons. It behooves the college to ponder these findings in light of its function to meet the needs of its students.

Supplementary to the previous conclusion, it was ascertained that approximately 55% of the students in the sample completed one year at Y.V.C. but only one student in five completed two full years. Why they departed prior to the completion of their stated intentions is not known at this time. Many factors had a bearing on the initial choice of major. Peer group, high school, and parental influence, realistic or unrealistic self-appraisal, college, finances, marriage, selective service induction, and understanding the function of college are a few examples of considerations that affect the student's choice.

> Probably the most significant percentage figures were the ones giving the number who met each "success" criteria. Of the total N of 2061, 9.2% did transfer, 23.4% completed 85 credit hours with a 1.75 college G.P.A. or better, and 1.3% completed 60 vocational credit hours with a 1.75 G.P.A. The most shocking statistic was that the remaining 66% did not meet any of the criteria and were considered "dropouts".

The second phase of the study involved a review of the variables in phase one and a decision to find out which ones would be differential predictors of the likelihood of student "success". Nine predictor variables, sex, age at matriculation, high school G.P.A., declared major, proximity to Y.V.C., birth order, father's education, mother's education, and father's occupation, were selected. A Chi Square value was computed to show the relationship between each predictor variable and the various "success" criteria. Five of the variables, sex, high school G.P.A., declared major, father's occupation, and proximity were found to be significant beyond the pre-established .05 level of significance. Both father's and mother's education were of borderline significance and could conceivably have a bearing on whether the student might drop out. Only age at matriculation and birth order were found to have a non-significant relationship in predicting the likelihood of success.

If the study were to be reconducted today a few changes would be made in redefining some of the predictor variables and the method of data collection. The bulk of the study went according to plan, however, and the design and methodology should be functional for replication by Y.V.C. or other community colleges with similar facilities.

The final question concerning the worth of the study is a difficult one to answer. The one who conducts such a project from its conception and embryonic development to a reality is quite personally involved and is really not in a position to make such a value judgment. The data and its implications have been prepared with candor and will now be presented to the entire staff at Yakima Valley College in the hope that they will find it a useful tool when making policy and academic decisions. This project has many limitations and contains no sacrosanct truths. Every attempt has been made to identify the shortcomings so the findings can be a useful adjunct if considered within the proper context. The potential of this type of study will be realized if it will serve as a springboard to future inquiry about the types of students on a community college campus, their felt and unmet needs, and the best means of meeting these needs. It is on this hopeful note that this project is concluded.

INTERPRETATION OF THE TABLES

The great volume of descriptive data generated in this study poses some problems for presentation in a clear, concise manner. In an effort to consolidate the data, a series of tri-matrix percentage tables have been prepared and are appended to this report.

A sample of the type of table is shown below. The example below is part of the actual findings of the study.

Resident Status

		Resident	Non-Resident	N
	Male	96.6 62.6 60.9	3.4 81.5 2.1	1300 63.1%
Sex	Female	98.7 37.4 36.4	1.3 18.5 0.5	761 36.9%
	N	2007 97.4%	54 2.6%	2061 100.0%

$\chi^2 = 8.065$
df = 1
$P < .01/.001$

As noted, this table presents the relationship between Resident Status and Sex. The numbers in the rows and columns are percentages expressed to tenths of a percent. The last column to the right indicates that there were 1300 males and 761 females for a total of 2061 students in this sample. The percentage figures below the numbers show that 63.1% of the 2061 students were males and 36.9% were females. Adding these two percentage values produces 100%. The bottom row shows that 2007 (97.4%) were residents and 54 (2.6%) were non-residents. Adding these two percentage values also produces 100%.

The rest of the rows and columns have been divided by a diagonal line and each cell contains three percentage values. The number below the diagonal tells what percentage each cell is of the total sample (2061). Thus 60.9% of the total group were male residents, 2.1% were non-resident males, 36.4% were female residents and 0.5% were non-resident females. If one adds the percentage values below the diagonal in each row, the total will be the percentage in the last column (for males - 60.9% + 2.1% = 63.1%). Adding the same numbers for each column produces like results (for residents - 60.9% + 36.4% = 97.4%). The percentage values are rounded so there may be a discrepancy of .1 or .2 in the total percentages which are obtained.

When one is interested in the percentage values within a single row the numbers in the upper right corner of each cell above the diagonal become important. These values represent what percent each cell is of the row total. In the example above 96.6% of the males (1300) were residents and 3.4% of the males were non-residents. Likewise, of the females in the sample (761), 98.7% were residents and 1.3% were non-residents. Adding the percentage values in the upper right corner should produce 100% for each row.

Finally, the percentage values in the lower left portion above the diagonal represent the percentage each cell is of the column total. Thus for residents (2007), 62.6% were males and 37.4% were females. For non-residents (54), 81.5% were males and 18.5% were females. Adding the percentage values in the lower left corner should produce 100% for each column.

To summarize and reiterate, the percentage value below the diagonal represents the percentage each cell is of the total sample. The number in the upper right corner of each cell represents the percentage that cell is of the row total while the number in the lower left corner shows the percentage of each cell to the total of that column.

The values χ^2, df, and P are included if the reader is concerned whether the relationship between the variables in question is significant or could have occurred by chance. One needs to exercise caution in utilizing these values, especially if the percentage values below the diagonal lines for many cells is quite small. The real value of the tables lies mainly in the descriptive data which they provide.

All of the tables which follow will have the same design so an understanding of this example should enable one to analyze and conclude from any matrix.

APPENDIX A

Row, Column, and Total Percentage Table
for
Sex and Marital Status
Table II

Marital Status

		Single	Married	Divorced	N
Sex	Male	98.2 63.9 61.9	1.8 41.1 1.1	0.1 11.1 0.0	1300 63.1%
	Female	94.6 36.1 34.9	4.3 58.9 1.6	1.1 88.9 0.4	761 36.9%
	N	1996 96.8%	56 2.7%	9 0.4%	2061 100.0%

$\chi^2 = 22.699$
df = 2
$P < .001$

Row, Column, and Total Percentage Table

for

Sex and Age at Matriculation

Table III

Age

Sex

	18	19	20	21-55	N
M	29.1 61.0 18.3	45.8 62.5 28.9	18.1 68.5 11.4	7.0 63.2 4.4	1300 63.1%
F	31.8 39.0 11.7	47.0 37.5 17.4	14.2 31.5 5.2	7.0 36.8 2.6	761 36.9%
N	620 30.1%	954 46.3%	343 16.6%	144 7.0%	2061 100.0%

$\chi^2 = 5.686$
$df = 3$
$.20 < P < .10$

Row, Column, and Total Percentage Table

for

Sex and Declared Major (Area)

Table IV

Declared Major

Sex		Applied Sciences	Biological Sciences	Health Sciences	Business & Econ.	Business (Vocation)
	Male	24.2 94.6 15.2	7.5 66.4 4.7	0.5 3.4 0.2	18.3 78.0 11.5	0.7 10.0 0.4
	Female	2.4 5.4 0.9	6.4 33.6 2.4	11.7 96.6 4.4	8.8 22.0 3.3	10.6 90.0 3.9
	N	332 16.1%	146 7.1%	94 4.6%	305 14.8%	90 4.4%

Row, Column, and Total Percentage Table
for
Sex and Declared Major (Area)
Table IV (Continued)

Declared Major

Sex		Creat. Arts	Lang. & Lit.	Physical Education	Physical Science	Soc. Sci. & Undecided	N
	Male	6.8 58.2 4.3	1.6 30.9 1.0	6.8 87.1 4.3	3.7 88.9 2.3	30.1 54.5 19.0	1300 63.1%
	Female	8.4 41.8 3.1	6.2 69.1 2.3	1.7 12.9 0.6	0.8 11.1 0.3	43.0 45.5 15.9	761 36.9%
	N	153 7.4%	68 3.3%	101 4.9%	54 2.6%	718 34.8%	2061 100.0%

Row, Column, and Total Percentage Table

for

Sex and College Division at Y. V. C.

Table V

College Division

Sex		Applied Science	Biological Science	Business Admin.	Creative Arts	Lang. & Lit.	Physical Education	Physical Science
	Male	24.2 94.6 15.2	7.8 42.5 4.9	19.0 62.5 12.0	6.8 58.2 4.3	1.6 30.9 1.0	6.8 87.1 4.3	3.7 88.9 2.3
	Female	2.4 5.4 0.9	18.1 57.5 6.7	19.4 37.5 7.2	8.4 41.8 3.1	6.2 69.1 2.3	1.7 12.9 0.6	0.8 11.1 0.3
	N	332 16.1%	240 11.6%	395 19.2%	153 7.4%	68 3.3%	101 4.9%	54 2.6%

Row, Column, and Total Percentage Table

for

Sex and College Division

Table V (Continued)

		College Division		
		Social Science	Undecided	N
Sex	Male	13.7 48.0 8.6	16.4 61.4 10.3	1300 63.1%
	Female	25.4 52.0 9.4	17.6 38.6 6.5	761 36.9%
	N	371 18.0%	347 16.8%	2061 100.0%

Row, Column, and Total Percentage Table

for

Sex and High School G.P.A.

Table VI

		High School G.P.A.			
		0.00 2.00	2.01 3.00	3.01 4.00	N
Sex	Male	39.2 76.0 25.0	54.8 62.8 34.9	6.1 33.6 3.9	1251 63.8%
	Female	21.8 24.0 7.9	57.0 37.2 20.7	21.1 66.4 7.6	710 36.2%
	N	645 32.9%	1090 55.6%	226 11.5%	1961 100.0%

$\chi^2 = 130.857$
df = 2
$P < .001$

Row, Column, and Total Percentage Table

for

Sex and Yakima Valley College G.P.A.

Table VII

Yakima Valley College G.P.A.

Sex		0.00 0.99	1.00 1.99	2.00 2.99	3.00 4.00	N
	Male	18.4 71.5 11.6	42.7 66.9 26.8	34.5 59.2 21.7	4.4 38.7 2.8	1253 62.8%
	Female	12.4 28.5 4.6	35.7 33.1 13.3	40.2 40.8 14.9	11.7 61.3 4.4	742 37.2%
	N	323 16.2%	800 40.1%	730 36.6%	142 7.1%	1995 100.0%

$\chi^2 = 55.504$
df = 3
$P < .001$

Row, Column, and Total Percentage Table

for

Sex and Total Hours Completed at Y. V. C.

Table VIII

Total Hours Completed

		1-20	21-30	31-40	41-50	51-60	61-70
Sex	Male	10.2 64.4 6.5	11.2 57.6 7.0	13.7 59.4 8.7	18.4 63.0 11.6	5.8 61.5 3.7	3.9 54.3 2.4
	Female	9.6 35.6 3.6	14.0 42.4 5.2	16.0 40.6 5.9	18.4 37.0 6.8	6.2 38.5 2.3	5.5 45.7 2.1
	N	205 10.0%	250 12.2%	298 14.6%	376 18.4%	122 6.0%	92 4.5%

$\chi^2 = 28.479$
df = 8
$P < .001$

Row, Column, and Total Percentage Table

for

Sex and Total Hours Completed at Y. V. C.

Table VIII (Continued)

Total Hours Completed

Sex		71-80	81-90	91-149	N
	Male	4.7 52.6 3.0	11.9 73.6 7.5	20.2 68.6 12.7	1289 63.0%
	Female	7.3 47.4 2.7	7.3 26.4 2.7	15.7 31.4 5.8	757 37.0%
	N	116 5.7%	208 10.2%	379 18.5%	2046 100.0%

Row, Column, and Total Percentage Table

for

Sex and Method of College Financing

Table IX

Method of College Financing

Sex		Academic Scholar	Athletic Scholar	Part-Time Job	Parents	Work-Study
	Male	1.2 42.9 0.7	1.8 100.0 1.1	45.2 75.4 28.5	9.3 41.9 5.9	0.2 33.3 0.1
	Female	2.6 57.1 1.0	0.0 0.0 0.0	25.2 24.6 9.3	22.1 58.1 8.2	0.5 66.7 0.2
	N	35 1.7%	23 1.1%	780 37.8%	289 14.0%	6 0.3%

$\chi^2 = 141.723$
df = 9
$P < .001$

Row, Column, and Total Percentage Table
for
Sex and Method of College Financing
Table IX (Continued)

Method of College Financing

Sex		Other	Parents and Part-Time	G.I. Bill	N
	Male	8.8 44.4 5.5	30.8 59.2 19.5	2.8 69.2 1.7	1300 63.1%
	Female	11.1 55.6 4.1	36.3 40.8 13.4	2.1 30.8 0.8	761 36.9%
	N	199 9.6%	677 32.8%	52 2.5%	2061 100.0%

Row, Column, and Total Percentage Table

for

High School G.P.A. and College G.P.A.

Table X

Yakima Valley College G.P.A.

High School G.P.A.	0.00 0.99	1.00 1.99	2.00 2.99	3.00 4.00	N
0.00 2.00	33.7 66.4 10.9	48.5 37.8 15.5	17.1 15.0 5.4	0.7 3.2 0.2	608 32.0%
2.01 3.00	9.8 33.3 5.5	43.0 59.1 24.1	43.8 67.8 24.6	3.4 28.2 1.9	1063 56.0%
3.01 4.00	0.4 0.3 0.1	9.7 2.8 1.2	52.2 17.2 6.2	37.6 68.5 4.5	226 11.9%
N	312 16.4%	773 40.7%	687 36.2%	125 6.6%	1897 100.0%

$\chi^2 = 725.713$

df = 12

$P < .001$

Row, Column, and Total Percentage Table

for

High School G.P.A. and Total Hours Completed at Y. V. C.

Table XI

High School G.P.A.	Total Hours Completed				
	1-20	21-30	31-40	41-50	51-60
0.00-2.00	16.7 55.2 5.5	17.7 49.1 5.8	19.2 42.7 6.3	16.4 28.8 5.4	5.2 28.7 1.7
2.01-3.00	7.2 40.2 4.0	9.6 45.2 5.3	13.9 52.1 7.7	19.7 58.4 10.9	6.7 62.6 3.7
3.01-4.00	4.0 4.6 0.5	5.8 5.7 0.7	6.6 5.2 0.8	20.8 12.9 2.4	4.4 8.7 0.5
N	194 10.0%	230 11.8%	288 14.8%	365 18.8%	115 5.9%

$\chi^2 = 223.363$
df = 16
$P < .001$

Row, Column, and Total Percentage Table

for

High School G.P.A. and Total Hours Completed at Y. V. C.

Table XI (Continued)

Total Hours Completed

High School G.P.A.	61-70	71-80	81-90	91-149	N
0.00-2.00	5.6 41.4 1.8	5.3 31.5 1.7	6.7 21.7 2.2	7.2 12.7 2.4	640 32.9%
2.01-3.00	4.1 50.6 2.3	5.7 57.4 3.2	12.4 67.7 6.9	20.6 61.8 11.5	1080 55.5%
3.01-4.00	3.1 8.0 0.4	5.3 11.1 0.6	9.3 10.6 1.1	40.7 25.5 4.7	226 11.6%
N	87 4.5%	108 5.5%	198 10.2%	361 18.6%	1946 100.0%

Row, Column, and Total Percentage Table

for

High School G.P.A. and College Division at Y. V. C.

Table XII

High School G.P.A.

College Division	0.00-2.00	2.01-3.00	3.01-4.00	N
Applied Science	31.8 15.8 5.3	60.4 17.8 9.9	7.8 11.1 1.3	321 16.4%
Biological Science	28.7 9.7 3.2	55.1 10.9 6.1	16.2 15.5 1.8	216 11.0%
Business Admin.	37.9 22.2 7.3	53.7 18.7 10.4	8.4 14.2 1.6	380 19.4%
Creative Arts	30.2 6.7 2.3	60.4 8.3 4.6	9.4 6.2 0.7	149 7.6%
Lang. and Lit.	22.2 2.2 0.7	47.6 2.8 1.5	30.2 8.4 1.0	63 3.2%

$\chi^2 = 94.597$
df = 27
$P < .001$

Row, Column, and Total Percentage Table

for

High School G.P.A. and College Division at Y. V. C.

Table XII (Continued)

High School G.P.A.

College Division	0.00 2.00	2.01 3.00	3.01 4.00	N
Physical Education	39.8 6.1 2.0	58.2 5.2 2.9	2.0 0.9 0.1	98 5.0%
Physical Science	26.4 2.2 0.7	50.9 2.5 1.4	22.6 5.3 0.6	53 2.7%
Social Science	24.8 13.6 4.5	58.3 19.0 10.6	16.9 26.5 3.1	355 18.1%
Undecided	4.20 21.4 7.0	49.7 14.9 8.3	8.3 11.9 1.4	326 16.6%
N	645 32.9%	1090 55.6%	226 11.5%	1961 100.0%

Row, Column, and Total Percentage Table

for

High School Rank and High School Size

Table XIII

High School Rank	1-99	100-199	200-299	300-399	400-499
1-9	71.4 16.3 4.1	18.8 4.6 1.1	4.5 2.4 0.3	3.6 2.5 0.2	1.8 0.5 0.1
10-49	60.3 66.6 16.9	22.5 26.5 6.3	7.9 20.3 2.2	3.3 11.0 0.9	5.0 6.2 1.4
50-99	19.8 17.1 4.3	50.1 46.3 11.0	11.3 22.6 2.5	5.9 15.3 1.3	11.5 11.3 2.5
100-199	Not Applicable	27.1 22.6 5.4	26.8 48.6 5.3	14.8 35.0 2.9	29.2 25.7 5.8
200-299	Not Applicable	Not Applicable	6.0 6.1 0.7	22.9 30.7 2.6	58.7 29.4 6.6
300-399	Not Applicable	Not Applicable	Not Applicable	5.5 5.5 0.5	60.7 22.8 5.1
400-899	Not Applicable	Not Applicable	Not Applicable	Not Applicable	19.1 4.1 0.9
N	491 25.3%	460 23.7%	212 10.9%	163 8.4%	435 22.4%

Row, Column, and Total Percentage Table
for
High School Rank and High School Size
Table XIII (Continued)

High School Rank	500-599	600-999	N
1-9	0.0 0.0 0.0	0.0 0.0 0.0	112 5.8%
10-49	0.4 2.2 0.1	0.6 3.6 0.2	542 28.0%
50-99	1.2 5.4 0.3	0.2 1.2 0.1	425 21.9%
100-199	1.0 4.3 0.2	1.0 4.8 0.2	384 19.8%
200-299	9.2 21.5 1.0	3.2 8.3 0.4	218 11.2%
300-399	22.1 38.7 1.9	11.7 22.6 1.0	163 8.4%
400-899	27.7 28.0 1.3	53.2 59.5 2.6	94 4.9%
N	93 4.8%	84 4.3%	1938 100.0%

Row, Column, and Total Percentage Table

for

High School G.P.A. and High School Size

Table XIV

High School G.P.A.	High School Size 1-99	100-199	200-299	300-399	400-499	500-599	600-899	N
0.00-2.00	21.5 27.7 7.0	22.6 31.4 7.4	11.6 34.3 3.8	7.6 29.7 2.5	22.3 32.3 7.3	7.6 50.5 2.5	6.9 52.4 2.3	620 32.7%
2.01-3.00	27.0 59.3 15.0	24.0 56.7 13.3	10.9 54.8 6.1	8.3 55.7 4.6	22.6 55.7 12.5	3.9 44.1 2.2	3.3 42.7 1.8	1055 55.6%
3.01-4.00	28.4 13.1 3.3	23.9 11.9 2.8	10.4 11.0 1.2	10.4 14.6 1.2	23.0 11.9 2.7	2.3 5.4 0.3	1.8 4.9 0.2	222 11.7%
N	481 25.4%	446 23.5%	210 11.1%	158 8.3%	427 22.5%	93 4.9%	82 4.3%	1897 100.0%

$\chi^2 = 37.856$
df = 12
$P < .001$

Row, Column, and Total Percentage Table
for
High School G.P.A. and High School Rank
Table XV

High School Rank

High School G.P.A.	1-9	10-49	50-99	100-199
0.00-2.00	0.3 1.8 0.1	12.4 14.4 4.1	17.4 26.2 5.7	24.1 39.6 7.9
2.01-3.00	2.7 26.6 1.5	32.5 64.4 18.1	26.2 67.1 14.6	21.2 59.6 11.8
3.01-4.00	35.0 71.6 4.1	50.7 21.2 6.0	12.6 6.8 1.5	1.3 0.8 0.2
N	109 5.7%	533 28.1%	413 21.8%	376 19.8%

Row, Column, and Total Percentage Table
for
High School G.P.A. and High School Rank
Table XV (Continued)

High School Rank

High School G.P.A.	200-299	300-399	400-899	N
0.00-2.00	12.8 36.7 4.2	19.5 75.6 6.4	13.4 90.2 4.4	619 32.6%
2.01-3.00	12.9 63.3 7.2	3.6 23.7 2.0	0.9 9.8 0.5	1056 55.6%
3.01-4.00	0.0 0.0 0.0	0.4 0.6 0.1	0.0 0.0 0.0	223 11.7%
N	215 11.3%	160 8.4%	92 4.8%	1898 100.0%

Row, Column, and Total Percentage Table
for
College G.P.A. and High School Rank
Table XVI

High School Rank

College G.P.A.	1-9	10-49	50-99	100-199	200-299
0.00-0.99	1.0 2.7 0.2	16.0 9.2 2.6	16.0 12.1 2.6	22.5 18.6 3.7	13.4 19.2 2.2
1.00-1.99	1.6 10.7 0.6	24.7 35.6 10.1	24.1 45.3 9.8	22.5 46.5 9.2	13.6 48.6 5.5
2.00-2.99	7.2 43.8 2.6	35.2 45.0 12.7	23.0 38.4 8.3	17.8 32.7 6.4	10.0 31.8 3.6
3.00-4.00	37.2 42.9 2.6	41.9 10.2 2.9	13.2 4.2 0.9	6.2 2.2 0.4	0.8 0.5 0.1
N	112 6.0%	531 28.3%	406 21.6%	370 19.7%	214 11.4%

$\chi^2 = 457.982$
df = 18
$P < .001$

Row, Column, and Total Percentage Table

for

College G.P.A. and High School Rank

Table XVI (Continued)

High School Rank

College G.P.A.	300-399	400-899	N
0.00-0.99	17.0 33.8 2.8	14.1 46.7 2.3	306 16.3%
1.00-1.99	9.7 48.1 3.9	3.9 32.6 1.6	765 40.7%
2.00-2.99	4.0 17.5 1.4	2.8 20.7 1.0	679 36.1%
3.00-4.00	0.8 0.6 0.1	0.0 0.0 0.0	129 6.9%
N	154 8.2%	92 4.9%	1879 100.0%

Row, Column, and Total Percentage Table

for

Total Hours at Y. V. C. and College G.P.A.

Table XVII

College G.P.A.

Total Hours at Y. V. C.	0.00-0.99	1.00-1.99	2.00-2.99	3.00-4.00	N
1-20	46.0 22.9 3.7	28.0 5.6 2.3	23.0 5.1 1.9	3.1 3.5 0.3	161 8.1%
21-30	44.1 33.4 5.4	40.4 12.4 5.0	13.9 4.7 1.7	1.6 2.8 0.2	245 12.3%
31-40	30.4 27.9 4.5	49.3 18.2 7.3	17.2 7.0 2.6	3.0 6.3 0.5	296 14.8%
41-50	10.4 12.1 2.0	48.1 22.6 9.1	32.7 16.8 6.2	8.8 23.2 1.7	376 18.8%
51-60	6.6 2.5 0.4	59.0 9.0 3.6	27.9 4.7 1.7	6.6 5.6 0.4	122 6.1%
61-70	2.2 0.6 0.1	67.4 7.7 3.1	28.3 3.6 1.3	2.2 1.4 0.1	92 4.6%

$\chi^2 = 790.557$
df = 24
$P < .001$

Row, Column and Total Percentage Table

for

Total Hours at Y. V. C. and College G.P.A.

Table XVII (Continued)

	College G.P.A.				
Total Hours at Y. V. C.	0.00-0.99	1.00-1.99	2.00-2.99	3.00-4.00	N
71-80	1.7 0.6 0.1	51.7 7.5 3.0	42.2 6.7 2.5	4.3 3.5 0.3	116 5.8%
81-90	0.0 0.0 0.0	37.0 9.6 3.9	60.1 17.1 6.3	2.9 4.2 0.3	208 10.4%
91-149	0.0 0.0 0.0	15.3 7.2 2.9	66.2 34.4 12.6	18.5 49.3 3.5	379 19.0%
N	323 16.2%	800 40.1%	730 36.6%	142 7.1%	1995 100.0%

Row, Column, and Total Percentage Table

for

College G.P.A. and Method of College Financing

Table XVIII

Method of Financing

College G.P.A.

	Academic Scholar	Athletic Scholar	Part-Time Job	Parents
0.00-0.99	0.0 0.0 0.0	0.9 13.0 0.2	34.1 14.6 5.5	18.0 20.4 2.9
1.00-1.99	1.2 28.6 0.5	1.5 52.2 0.6	37.8 40.0 15.2	15.0 42.3 6.0
2.00-2.99	2.3 48.6 0.9	1.1 34.8 0.4	40.6 39.0 14.9	12.6 32.4 4.6
3.00-4.00	5.7 22.9 0.4	0.0 0.0 0.0	34.0 6.4 2.4	9.9 4.9 0.7
N	35 1.8%	23 1.2%	758 38.0%	284 14.2%

$\chi^2 = 58.571$
df = 36
$.20 < P < .10$

Row, Column, and Total Percentage Table

for

College G.P.A. and Method of College Financing

Table XVIII (Continued)

Method of Financing

College G.P.A.	Other	Parents & Part-Time	G.I. Bill	N
0.00-0.99	12.7 17.6 2.1	32.2 15.9 5.2	2.2 14.0 0.4	323 16.2%
1.00-1.99	8.1 38.2 3.4	33.2 40.7 13.3	3.0 48.0 1.2	800 40.1%
2.00-2.99	9.6 38.2 3.6	31.8 35.5 11.6	1.9 28.0 0.7	730 36.6%
3.00-4.00	10.6 5.9 0.8	36.2 8.0 2.7	3.5 10.0 0.3	142 7.2%
N	191 9.6%	654 32.8%	50 2.5%	1995 100.0%

Row, Column, and Total Percentage Table

for

Proximity and College G.P.A.

Table XIX

College G.P.A.

Proximity

	0.00-0.99	1.00-1.75	1.76-1.99	2.00-2.99	3.00-4.00	N
Yakima County	9.8 7.2 1.2	19.0 8.2 2.4	13.1 16.7 1.6	49.7 16.7 6.2	8.5 13.8 1.1	153 12.4%
East of Cascades	10.2 16.3 2.8	25.9 24.3 7.0	10.8 30.0 2.9	43.4 31.6 11.7	9.6 34.0 2.6	332 27.0%
West of Cascades	21.3 76.4 12.9	32.0 67.5 19.4	8.6 53.3 5.2	31.5 51.6 19.1	6.6 52.1 4.0	746 60.6%
N	208 16.9%	354 28.8%	120 9.7%	455 37.0%	94 7.6%	1231 100.0%

$\chi^2 = 53.310$
df = 8
$P > .001$

Row, Column, and Total Percentage Table

for

Proximity to Y.V.C. and Total Hours

Table XX

Total Hours

		1-19	20-29	30-39	40-49	50-59	60-69
	C.C. Dist. 16	3.9 5.5 0.5	1.3 1.8 0.2	5.2 5.1 0.6	6.5 4.8 0.8	12.4 20.7 1.5	6.5 15.2 0.8
Proximity	East of Cascades	4.5 13.8 1.2	3.9 11.8 1.1	5.7 12.1 1.5	9.0 14.3 2.4	9.3 33.7 2.5	7.5 37.9 2.0
	West of Cascades	11.8 80.7 7.1	12.6 86.2 7.6	17.4 82.8 10.6	22.8 81.0 13.8	5.6 45.7 3.4	4.1 47.0 2.5
	N	109 8.8%	109 8.8%	157 12.7%	210 17.0%	92 7.5%	66 5.4%

$\chi^2 = 240.014$
df = 18
$P < .001$

Row, Column, and Total Percentage Table

for

Proximity to Y.V.C. and Total Hours

Table XX (Continued)

Total Hours

Proximity		70-79	80-89	90-99	100-149	N
	C.C. Dist. 16	9.8 19.0 1.2	10.5 13.1 1.3	37.3 24.7 4.6	6.5 17.5 0.8	153 12.4%
	East of Cascades	10.8 45.6 2.9	14.8 40.2 4.0	26.5 38.1 7.1	7.8 45.6 2.1	332 26.9%
	West of Cascades	3.7 35.4 2.3	7.6 46.7 4.6	11.5 37.2 7.0	2.8 36.8 1.7	747 60.6%
	N	79 6.4%	122 9.9%	231 18.8%	57 4.6%	1232 100.0%

APPENDIX B

Row, Column, and Total Percentage Table
for
"Success" Criteria and Sex
Table XXI

Sex

		Male	Female	N
"Success"	Dropout	60.6 63.5 40.0	39.4 70.4 26.0	1361 66.0%
	College Transfer	68.9 10.1 6.4	31.1 7.8 2.9	190 9.2%
	85 Hrs. & >1.75	69.2 25.7 16.2	30.8 19.6 7.2	483 23.4%
	60 Hrs. &>1.75	37.0 0.8 0.5	63.0 2.2 0.8	27 1.3%
	N	1300 63.1%	761 36.9%	2061 100.0%

$\chi^2 = 21.859$
df = 3
P = < .001

Row, Column and Total Percentage Table

for

"Success" Criteria and Age at Matriculation

Table XXII

Age

		18	19	20	21-55	N
"Success"	Dropout	29.9 65.6 19.7	45.1 64.4 29.8	17.8 70.6 11.7	7.2 68.1 4.8	1361 66.0%
	College Transfer	32.1 9.8 3.0	50.0 10.1 4.6	13.7 7.6 1.3	4.2 5.6 0.4	190 9.2%
	85 Hrs. & > 1.75	29.8 24.5 7.4	48.0 25.7 11.9	14.7 21.9 3.6	7.5 26.4 1.8	510 24.7%
	N	620 30.1%	954 46.3%	343 16.6%	144 7.0%	2061 100.0%

$\chi^2 = 7.145$
df = 6
$.50 < P < .30$

Row, Column and Total Percentage Table

for

"Success" Criteria and High School G.P.A.

Table XXIII

		High School G.P.A.			
		0.00-1.99	2.00-2.99	3.00-4.00	N
"Success"	Dropout	32.5 84.0 21.4	59.0 65.0 38.9	8.6 38.8 5.7	1294 66.0%
	College Transfer	18.9 7.0 1.8	61.1 9.6 5.8	20.0 12.9 1.9	185 9.4%
	85 Hrs. & >1.75	9.4 9.0 2.3	62.0 25.4 15.2	28.7 48.3 7.0	481 24.5%
	N	500 25.5%	1174 59.9%	286 14.6%	1960 100.0%

$\chi^2 = 178.710$
df = 4
$P < .001$

Row, Column, and Total Percentage Table
for
Declared Major and "Success" Criteria
Table XXIV

	"Success"		
Declared Major	College Transfer	85 Hrs. + 1.75	N
Applied Science	19.9 14.7 4.2	80.1 23.4 16.8	141 21.0%
Biological Sciences	35.4 12.1 3.4	64.6 8.7 6.2	65 9.7%
Health Sciences	16.7 2.1 0.5	83.3 3.9 2.7	23 3.4%
Business & Econ.	35.3 15.8 4.5	64.7 11.4 8.2	85 12.6%
Business (Voc.)	18.2 1.1 0.3	81.8 1.9 1.3	11 1.6%

$\chi^2 = 20.291$
df = 11
$.05 < / < .02$

Row, Column, and Total Percentage Table
for
Declared Major and "Success" Criteria
Table XXIV (Continued)

"Success"

Declared Major	College Transfer	85 Hrs. + 1.75	N
Creative Arts	14.0 3.7 1.0	86.0 8.9 6.4	50 7.4%
Language and Lit.	33.3 4.7 1.3	66.7 3.7 2.7	27 4.0%
Physical Education	42.4 7.4 2.1	57.6 3.9 2.8	33 4.9%
Physical Science	26.9 3.7 1.0	73.1 3.9 2.8	26 3.9%
Social Science & Undecided	31.1 34.7 9.8	68.9 30.2 21.7	212 31.5%
N	190 28.2%	483 71.8%	673 100.0%

Row, Column, and Total Percentage Table

for

"Success" Criteria and Birth Order

Table XXX

		Birth Order					
		1st	2nd	3rd	4th	5-9th	N
"Success"	Dropout	42.5 65.3 28.1	29.5 65.5 19.5	15.6 69.1 10.3	5.7 65.3 3.7	6.7 67.4 4.4	1361 66.0%
	College Transfer	40.5 8.7 3.7	34.2 10.6 3.2	12.1 7.5 1.1	7.4 11.9 0.7	5.8 8.1 0.5	190 9.2%
	85 Hrs. &>1.75	45.3 26.0 11.2	28.8 23.9 7.1	14.1 23.5 3.5	5.3 22.9 1.3	6.5 24.4 1.6	510 24.7%
	N	887 43.0%	614 29.8%	307 14.9%	118 5.7%	135 6.6%	2061 100.0%

$\chi^2 = 5.302$
df = 8
$.08 < P < .70$

Row, Column, and Total Percentage Table

for

"Success" Criteria and Proximity to Y.V.C.

Table XXVI

Proximity to Y.V.C.

		C. C. Dist. #16	East Cascades	West Cascades	N
"Success"	Dropout	9.6 49.0 6.1	24.3 57.2 15.4	66.1 69.1 41.9	781 63.4%
	College Transfer	2.8 2.0 0.2	12.0 3.9 1.1	85.2 12.3 7.5	108 8.8%
	85 Hrs. & > 1.75	21.9 49.0 6.1	37.6 38.9 10.5	40.5 18.6 11.3	343 27.8%
	N	153 12.4%	332 26.9%	747 60.6%	1232 100.0%

$\chi^2 = 100.503$
df = 4
$P < .001$

Row, Column, and Total Percentage Table

for

"Success" Criteria and Mother's Education

Table XXVII

Mother's Education

		H.S. Degree or Less	Some Col. Less Degree	Bachelor Degree	Grad., Trade, & Other	N
"Success"	Dropout	74.1 67.3 48.9	14.3 64.7 9.4	6.9 58.7 4.6	4.8 62.5 3.2	1361 66.0%
	College Transfer	65.8 8.4 6.1	16.3 10.3 1.5	11.6 13.7 1.1	6.3 11.5 0.6	190 9.2%
	85 Hrs. & >1.75	71.4 24.3 17.7	14.7 25.0 3.6	8.6 27.5 2.1	5.3 26.0 1.3	510 24.7%
	N	1497 72.6%	300 14.6%	160 7.8%	104 5.0%	2061 100.0%

$\chi^2 = 8.423$
$df = 6$
$.30 < P < .20$

Row, Column, and Total Percentage Table

for

"Success" Criteria and Father's Education

Table XXVIII

Father's Education

		H.S. Diploma or Less	Some Col. Less Degree	Bachelor Degree	Grad., Trade, & Other	N
"Success"	Dropout	73.0 66.5 48.2	13.6 61.9 9.0	9.3 64.5 6.2	4.0 66.3 2.7	1361 66.0%
	College Transfer	62.6 8.1 5.7	20.5 13.0 1.9	11.6 11.2 1.1	5.3 12.0 0.5	190 9.2%
	85 Hrs. & > 1.75	72.3 25.5 17.9	14.7 25.1 3.6	9.4 24.4 2.3	3.5 21.7 0.9	510 24.7%
	N	1482 71.9%	299 14.5%	197 9.6%	83 4.0%	2061 100.0%

$\chi^2 = 14.405$
df = 8
$.10 < P < .05$

Row, Column, and Total Percentage Table

for

"Success" Criteria and Father's Occupation

Table XXIX

Father's Occupation

"Success"	Profession.	Manager.	Office & Sales	Retired & Own Farm	Skilled	Semi-Skilled
Dropout	14.4 68.5 9.5	13.8 65.3 9.1	15.6 68.8 10.3	15.6 60.9 10.3	22.7 67.3 15.0	6.5 67.9 4.3
College Transfer	15.3 10.1 1.4	11.6 7.6 1.1	17.9 11.0 1.6	18.4 10.1 1.7	16.3 6.8 1.5	6.8 9.9 0.6
85 Hrs. &> 1.75	12.0 21.3 3.0	15.3 27.1 3.8	12.2 20.1 3.0	19.8 29.0 4.9	23.3 25.9 5.8	5.7 22.1 1.4
N	286 13.9%	283 14.0%	308 14.9%	348 16.9%	459 22.3%	131 6.4%

$\chi^2 = 29.714$
df = 14
$.01 < P < .001$

Row, Column, and Total Percentage Table
for
"Success" Criteria and Father's Occupation
Table XXIX (Continued)

Father's Occupation

"Success"		Unskilled	Civil Service	N
	Dropout	5.7 69.0 3.8	5.7 60.2 3.7	1361 66.0%
	College Transfer	2.1 3.5 0.2	11.6 17.2 1.1	190 9.2%
	85 Hrs. +>1.75	6.1 27.4 1.5	5.7 22.7 1.4	510 24.7%
	N	113 5.5%	128 6.2%	2061 100.0%

Row, Column, and Total Percentage Table

for

College G.P.A. and "Success" Criteria

Table XXX

		College Transfer	85 Qtr. Hrs. and 1.75 G.P.A.	N
College G.P.A.	0.00-1.99	54.9 38.6 10.9	45.1 12.4 8.9	133 19.8%
	2.00-2.99	21.5 50.3 14.1	78.5 71.8 51.6	442 65.8%
	3.00-4.00	21.6 11.1 3.1	78.4 15.7 11.3	97 14.4%
	N	189 28.1%	483 71.9%	672 100.0%

Row, Column, and Total Percentage Table
for
Total Hours at Y.V.C. and "Success" Criteria
Table XXXI

	"Success"		
Total Hours at Y.V.C.	College Transfer	85 Hrs. & 1.75 G.P.A.	N
1 - 40	100.0 27.4 7.7	Not Applicable	52 7.7%
41 - 50	100.0 42.1 11.9	Not Applicable	80 11.9%
51 - 80	100.0 21.6 6.1	Not Applicable	41 6.1%
81 - 90	10.0 7.4 2.1	90.0 26.1 18.7	140 20.8%
91 - 100	0.0 0.0 0.0	100.0 60.0 43.1	290 43.1%
101 - 149	4.3 1.6 0.4	95.7 13.9 10.0	70 10.4%
N	190 28.2%	483 71.8%	673 100.0%

APPENDIX C

SPECIFIC MAJORS WITHIN EACH DECLARED MAJOR AREA

APPLIED SCIENCES

Agriculture
Agronomy
Horticulture
Architecture
Engineering
Construction Tech. (Concrete)
Aeronautics Tech.
Automotive
Barber Tech.
Building Estimating Tech.
Cosmetology
Cabinet Making Tech.
Carpentry Tech.
Data Processing Tech.
Drafting Tech.
Dental Tech.
Diesel Tech.
Electronics Tech.
Civil Engineering Tech.
Agr. Engr. Tech. (Farm Mechanics)
Electronic Engineering Tech.
Mechanical Engineering Tech.
Food Preparation Tech.
Industrial Design
Machinist Technology
Pipe Fitting Technology
Sheet Metal Technology
Electrical Apprentice
Welding Technology
Carpenter Apprentice
Plumber Apprentice
Pipe Fitter Apprentice
Sheet Metal Apprentice
Meat Cutting Apprentice

BIOLOGICAL SCIENCES

Biology
Botany
Fisheries
Oceanography
Forestry
Wildlife Mgmt. (Range Mgmt.)
Pharmacy
Zoology
Home Economics
Interior Decoration
Pre-Medicine
Pre-Dentistry
Pre-Veterinary Medicine
Mortuary Science
Optometry
Physical Therapy

HEALTH SCIENCES

Medical Technician
X-Ray Technician
Pre-Nursing
Professional Nursing
St. Elizabeth Nursing
Practical Nursing

BUSINESS ADMINISTRATION

Accounting
Business Administration
Economics
Hotel Administration
Medical Secretary
Legal Secretary

BUSINESS (VOCATION)

Secretarial Training
Mid-Management

CREATIVE ARTS

Art (Creative Arts, Humanities)
Drama
Music
Speech
Journalism (Communications)
Advertising
Public Relations
Radio & Television

LANGUAGE & LITERATURE

English
Foreign Languages
Liberal Arts

SPECIFIC MAJORS WITHIN EACH DECLARED MAJOR AREA
(Continued)

PHYSICAL EDUCATION

Physical Education

PHYSICAL SCIENCES

Chemistry (Bio-Chem)
Meteorology
Geology
Physics
Math
Archaeology
General Science

SOCIAL SCIENCES

Anthropology
Education
Government
History
Law
Librarianship
Ministry
Philosophy
Police Science
Political Science
Psychology
Social Work
Social Science
Sociology

COUNSELING

General - Undecided
Unclassified

FORMAT FOR STUDENT MASTER CARD - DROP-OUT STUDY

Col. 1	Card Identification Code
Cols. 2 - 6	Student Identification Number Y.V.C.
Cols. 7 - 26	Student Name
Col. 27	Sex
Cols. 28 - 33	Date of Birth
Cols. 34 - 42	Social Security Number
Cols. 43 - 45	High School
Cols. 46 - 47	County
Cols. 48 - 49	State
Cols. 50 - 53	G.P.A. When Admitted
Cols. 54 - 55	Major
Col. 56	Residence/Non-Residence
Col. 57	Marital Status
Cols. 79 - 80	Major Division

FORMAT FOR TRANSCRIPT SUMMARY CARD - DROP-OUT STUDY

Col. 1	Card Identification Code
Cols. 2 - 6	Y.V.C. Student I.D. Number
Cols. 7 - 26	Student Name
Col. 27	Sex
Cols. 28 - 29	Void
Col. 30	Quarter
Cols. 31 - 32	Year

This Quarter

Cols. 33 - 37	Grade Points
Cols. 38 - 42	Total Hours
Cols. 43 - 45	G.P.A.
Cols. 46 - 48	F. or Repeat Hours
Cols. 49 - 51	P. E. Hours
Cols. 52 - 55	Academic Hours

To Date Including This Quarter

Cols. 56 - 60	Grade Points
Cols. 61 - 65	Total Hours
Cols. 66 - 68	G.P.A.
Cols. 69 - 71	F. or Repeat Hours
Cols. 72 - 74	P. E. Hours
Cols. 75 - 78	Academic Hours
Cols. 79 - 80	Major Division

FORMAT FOR PERSONAL DATA CARD - DROP-OUT STUDY

Col. 1	Card Code
Cols. 2 - 6	Student Number
Cols. 7 - 30	Void
Cols. 31 - 39	Washington Pre-College Test Number
Col. 40	Void
Col. 41	Veteran
Cols. 42 - 43	Number of Months in Service
Col. 44	Father's Occupation
Col. 45	Father's Educational Level
Col. 46	Older Siblings
Col. 47	Younger Siblings
Col. 48	Mother's Occupation
Col. 49	Mother's Educational Level
Col. 50	Vocational Plans
Col. 51	Expected Means of Financing College
Cols. 65 - 68	High School G.P.A.
Cols. 69 - 72	High School Rank in Graduating Class
Cols. 73 - 76	Size of High School Graduating Class

FORMAT OF STUDENT GRADE CARD - DROP-OUT STUDY

Col. 1	Card Identification Code
Cols. 2 - 6	Y.V.C. Student Number
Cols. 7 - 26	Void
Col. 27	Sex
Cols. 28 - 31	Void
Cols. 32 - 44	Course and Number
Cols. 45 - 47	Void
Cols. 48 - 53	Curriculum Analysis
Cols. 54 - 55	Void
Cols. 56 - 57	Period
Cols. 58 - 62	Void
Cols. 63 - 65	Grade
Cols. 66 - 70	Void
Col. 71	Type of Class
Cols. 72 - 73	Grade Points
Cols. 74 - 75	Credit Hours
Cols. 76 - 78	Void
Cols. 79 - 80	Major Division

STUDENT MASTER, TRANSCRIPT SUMMARY, AND PERSONAL DATA CONSOLIDATION CARD FORMAT

COLUMN	ITEM
1	Sex
2	Resident/Non
3	Marital Status
4, 5	Year of Birth
6, 7	H.S. GPA (No Decimal)
8 thru 14	County, Dist., H.S. (could be 2)
15, 16, 17	Total Hours
18, 19, 20	GPA
21, 22	Repeat Hours
23	P. E. Hours
24, 25, 26	Academic Hours
27, 28	Months in Service (blanks = Non Vet)
29	Father's Occupation
30	Father's Education
31	Older Siblings
32	Younger Siblings
33	Mother's Occupation
34	Mother's Education
35	Means of Financing College
36, 37, 38	Rank in H.S. Grad. Class
39, 40, 41	Size of H.S. Grad. Class
42	Success Identifier
72, 73	Major (Voc. Choice)
74	Major Division
75-79	Student I.D.Y.V.C.
80	Card Number